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## General Article

## THE INTERPRETATION OF URINE ANALYSIS IN DIAGNOSIS*

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I welcome the opportunity of directing the attention of members of your Division to the value of urine analysis as an aid to diagnosis, for, I believe, the help we receive from urine analysis will increase as our knowledge of the changes to be expected in disease increases.

At the outset, there are two points I want to emphasise, for the reason that, in my view, they are of paramount importance.

First, urine analysis must not be regarded as a short cut to diagnosis but as an extremely useful aid to diagnosis; indeed, to base a diagnosis on the results of an analysis of a sample of urine without regard to the clinical signs of the case might well lead to a much more dangerous mistake than would result from a diagnosis based on clinical signs alone. My experience convinces me that there are many cases where urine analysis will modify a diagnosis and lead to greater accuracy.

In other instances an erroneous diagnosis may be prevented.

The second point is this—to be of any real value the analysis of samples of urine should be conducted in a systematic manner; there is no more easy way of making mistakes than hurriedly to examine a sample of urine for one or two constituents, whose presence is suspected, and to fail to examine for others which may be there, for the presence of these may well be of more importance than those hastily sought.

I do not wish to weary you with details of the technique of tests, rather is it my desire to concentrate your thoughts and the discussion on the interpretation of the results of such tests. My experience at the Congress this year led me to believe that a brief description of the tests employed would be of some service. I have therefore taken the liberty of circulating a description of the technique of the tests employed in routine analysis of samples of urine; in this description I have omitted any tests that give information of doubtful value.*

There is a tendency to regard urine analysis as principally an aid to diagnosis in renal disease, and, while this is perhaps natural, I hope to convince you that it is a tendency that is wrong, for there are many diseases in which abnormalities are found in the urine and from these abnormalities a diagnosis may be made with confidence in an otherwise obscure case.

Compared with the dog, diseases of the kidneys are surprisingly rare in the larger domestic animals and practically all cases encountered in herbivora are of an acute type. Accurate diagnosis of renal disease in these animals is impossible without examination of a sample of urine: the securing of a sample presents no difficulty. Chronic disease of the kidney is very common in dogs and is always of the interstitial or azotæmic type; I have yet to see a case of hydræmic nephritis in the dog.

Before I describe interpretation of individual points, may I briefly refer to the more important alterations in kidney function in nephritis. The principal changes are: The kidneys become permeable to colloids and albumen appears in the urine; the kidneys lose the power to excrete concentrated urine; the excretion of nitrogenous end-products is impaired.

In addition, we must remember that in chronic interstitial nephritis in dogs the cardio-vascular changes are characteristic and of great diagnostic value. I know of no type of pulse more strikingly characteristic than that incompressible bounding pulse we meet in a dog with advanced nephritis and in a state of general body condition that would suggest a weak pulse.

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I propose now to consider the information one can obtain from each of the tests detailed in the sheets before you.

With the exception of a sample of urine containing macroscopic amounts of blood, little information of value can be obtained from the naked-eye appearance of the urine. Thus a pale limpid urine may be normal, or it may be found to contain sugar or albumen and a dark-coloured, cloudy urine can hardly be said to be abnormal when in fact it is but a highly concentrated specimen.

*Paper presented at a meeting of the Dumfries and Galloway Division, N.V.M.A., at Dumfries, December 13th, 1934.

*See Addendum.

Specific Gravity.—In acute nephritis an increase in the specific gravity may occur. An outstanding instance of greatly increased specific gravity is that which we encounter in the sugar-containing urine of diabetes mellitus in the dog. The dehydration of persistent vomiting may cause the urine to be concentrated. The specific gravity is lowered in polyuria in horses.

As a diagnostic aid the low specific gravity of the urine in chronic interstitial nephritis of dogs is of considerable importance and it is of prognostic significance, for, as the disease process advances, the specific gravity decreases and in an advanced case it may be as low as 1,003. This emphasises the inability of the kidney to concentrate urine.

Reaction.—The urine of normal herbivorous animals is alkaline to litmus but not to phenolphthalein; actually, an appreciable amount of N/10 alkali is needed to turn phenolphthalein pink. A slight febrile disturbance or the abstinence from food for more than a few hours rapidly produces an acid reaction. I have found the urine in cases of post-parturient dyspepsia to be acid.

In the dog an acid urine is normal, but an amphoteric reaction is not uncommon even in normal animals. Alkalinity I have only encountered in cystitis.

Albumen.—While the presence of albumen in the urine is of importance as an easily recognised sign of disordered function of the kidneys, its presence does not necessarily indicate severe kidney disease. Taken with the clinical signs and an examination of the deposits, however, we are able to make an accurate diagnosis of renal disease, but to diagnose renal disease on a finding of albuminuria *alone* would be foolish. In many febrile diseases—for instance, distemper in the dog—there as a sufficient degree of cloudy swelling of the kidney cells to cause albuminuria but no-one would suggest that any confusion could exist in clinical signs. I have also observed the presence of albumen in the urine of an animal which has sustained strenuous exertion shortly before the sample was obtained. Such an animal is usually in the best of condition and in a high state of muscular " fitness."

Albumen may also be found in diseases producing considerable tissue destruction and in those diseases in which, as a concomitant of the disease, renal congestion occurs. In acute nephritis, in addition to the renal epithelial cells becoming permeable to colloids in the bloodstream, the inflammatory process contributes to the amount of albumen, which is usually considerable. In chronic nephritis the amount of albumen tends to decrease as the disease progresses, until in the later stages only traces are present.

Bile Pigment.—Considerable care is necessary in dealing with the urine of herbivora to avoid the fallacy of stating that such a urine contains bile pigment when, in fact, it does not.

My experience of urines containing bile pigment is chiefly confined to the dog. In this animal traces of bile pigment are common in any catarrhal condition of the bowel and unless substantial amounts are present, undue anxiety as to the severity of the cause is unnecessary.

Bile pigment and bile salts appear in the urine in cases of obstructive and hæmolytic jaundice. Large amounts of bile pigment may, I find, indicate extensive liver damage but give no indication of its nature. I had two cases some time ago in which the amount of bile pigment appeared to be very great; one proved to be associated with multiple tumour formation in the liver and other was known to be the result of the second phase of phosphorus poisoning. The presence of bile pigment in the urine of cases of certain protozoan diseases is well known.

In the dog, taken in conjunction with the presence of indican, small amounts of bile pigment in the urine may, I consider, indicate stasis and putrefactive activity in the small bowel, often associated with catarrh of the mucous membrane.

Bile Salts.—The presence of bile salts is less frequent than that of bile pigment and is accordingly of more significance. Their presence indicates the existence of similar conditions to those mentioned under bile pigment.

Blood Pigment.—Any inflammatory condition of the urinary tract may cause the urine to become tinged with blood pigment but, in addition to these inflammatory conditions, any disease which causes substantial destruction of red blood cells will give rise to hæmoglobinuria.

Of the kidney conditions, it should be realised that renal congestion and acute nephritis may cause not only hæmoglobinuria but frequently also hæmaturia. In chronic interstitial nephritis we encounter an occasional acute phase when small amounts of blood escape into the urine. Hæmoglobinuria is recognised as a feature of azoturia in horses. As a clinical sign of bovine piroplasmosis its presence is well known.

In recent years considerable attention has been centred on a form of bovine hæmoglobinuria which follows parturition. I have examined a number of such urines and, in addition to albumen and blood, I found large amounts of acetone.

In tuberculous pleurisy in dogs where there has been extensive effusion into the pleural cavity, I have constantly found small amounts of hæmoglobin in the urine. The differentiation between hæmoglobinuria and hæmaturia is often of considerable significance in diagnosis. The presence of hæmoglobin as the only abnormality in urine would appear to suggest the existence of a *pre-renal* condition.

Sugar.—Appreciable amounts of lactose are to

be found in the urine of pregnant and lactating animals. It follows that the majority of dairy cows constantly have sugar in their urine. Lactose is not fermented by yeast and in a dairy cow a diagnosis of glycosuria should not be made unless the sugar in the urine is fermented by yeast.

Substantial amounts of sugar in a dog's urine suggest the possibility of diabetes mellitus. Unfortunately the diagnosis of some so-called cases of diabetes has, on closer investigation, been found to be based on the spurious reduction of Fehling's solution, and a critical examination of the urine has failed to disclose the presence of sugar. Small amounts of sugar are occasionally found in dog's urine when the renal threshold for sugar has been passed, as, for instance, may occur following a large meal extremely rich in carbohydrates, particularly sugars, but in these cases the amount of sugar in the urine is small and a second sample of urine taken a few hours later is found not to contain sugar.

Acetone.—The criticism of Rothera's test—the one described—is that it is too sensitive. Rothera's test has the merit that it gives a rough indication of the amount of acetone present, the amount being proportional to the intensity of the colour and the rapidity of its appearance. Knowing that it is sensitive we can assess the value of weak reactions. Gerhardt's ferric chloride test is much less satisfactory than Rothera's test.

In dog's urine acetone will be found in cases of diabetes mellitus when, owing to inefficient utilisation of carbohydrate, the animal is unable properly to burn up the fats. Its appearance indicates the approach of diabetic coma. Acetone may also be found in the urine of dogs after prolonged vomiting; such a finding indicates the desirability of administering glucose, preferably subcutaneously.

In regard to horse's urine, acetone has been found in those cases where there has been a relative or absolute carbohydrate starvation and rapid loss of condition.

In the urine of house-fed cattle I have found acetone in increasing frequency in normal animals as the winter progresses and the greatest incidence is just before the cows go out to grass.

In the urine of diseased animals the amount of acetone is very much greater than in normal urine and two conditions in which I have met literally enormous amounts of acetone have been post-parturient dyspepsia and post-parturient hæmoglobinuria.

We must regard acetonuria as an index of deficient carbohydrate intake, or faulty carbohydrate utilisation leading to the imperect oxidation of fats and the presence in the circulation of lower fatty acids.

Indican.—The production of indican is a normal part of the digestive processes in herbivora and I have been unable to appreciate any increase in the amount of indican in the urine in cases that would appear to be associated with increased alimentary bacterial activity.

In dog's urine indican is an abnormality and its presence, in more than minute amounts, is strong evidence of alimentary disease associated with the production of toxic substances—the absorption of these may be enhanced by alimentary stasis.

The association in a dog's urine of bile pigment, bile salts and indican presents the findings of a case of vomiting arising from alimentary toxæmia probably associated with stasis.

Deposits.—I am afraid I would weary you if I attempted to give a description of the various cellular elements to be found in the deposits. The recognition of the source of these cellular deposits is of material assistance in determining the exact nature of any renal lesion.

I also depend on the cellular elements in the urine to assist me in differentiating between the inflammatory conditions involving the urinary passages and those involving the kidneys themselves. The recognition of purulent conditions in the kidney must be based on an examination of the deposits and the demonstration therein of pus cells. The confident determination of hæmaturia must depend on the recognition of blood cells.

Estimation of the Amount of Urea.—I have not found any condition in bovines in which the determination of the urea content would be of value in either diagnosis or prognosis. Taken as a whole, the figure obtained in cows on modern diets is low but where the amount of concentrated food is large, as in fattening stock, the figure may be high.

The amount of urea in a dog's urine may be a valuable aid to prognosis in chronic interstitial nephritis. While there are substantial variations in the amount of urea in samples passed at different times of the day, the passage of urine at any time with a urea content of less than 1·5 per cent. is uncommon in healthy dogs. If therefore in a sample from a case of chronic nephritis the amount of urea exceeds 1·5 per cent. the immediate prognosis is still quite good, for it is evidence that the kidneys are still able to concentrate the urine up to a point in spite of the existence of renal disease. If, on the other hand, the amount is 0·75 per cent. or less the prognosis is poor.

## SUMMARY OF RESULTS

As I have indicated, in some cases the significance of the results obtained from the analysis of a sample of urine lies in the combined information obtained from the various tests. Thus:—

In a dog's urine, low specific gravity, traces of albumen, low urea content and hyaline casts

suggest the existence of fairly advanced chronic interstitial nephritis.

In a dog's urine, high specific gravity, bile pigment, bile salts, indican and possibly acetone would result from the vomiting associated with alimentary toxæmia.

High specific gravity, sugar and acetone are found in cases of diabetes mellitus.

High specific gravity, albumen, blood and kidney cells are the findings in acute nephritis in any animal.

In conclusion, may I say that the more one uses urine analysis as an aid to diagnosis the greater assistance one gets from it and the greater the accuracy in diagnosis attained.

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## ADDENDUM

### Technique of Tests Employed in Routine Examination of Samples of Urine

1. Specific Gravity.

Estimated with a hydrometer.

Specific gravity in normal animals is subject to considerable variation. The following are the usual figures for the domestic animals:—

| | | *Average.* |
|---|---|---|
| Horse | 1020—1050 ... ... | 1035 |
| Cattle | 1005—1040 ... ... | 1015 |
| Dog | 1015—1045 ... ... | 1020 |

2. Reaction.

Determined by means of red and blue litmus paper.

In normal herbivora the reaction is alkaline; in dogs it is acid.

3. Albumen.

*Heat plus Acetic Acid.*—Some urine is boiled in a test tube; to this are added a few drops of dilute acetic acid; the contents of the tube are again boiled. Coagulation of albumen renders the contents of the tube cloudy. Acidulation is necessary to avoid errors due to the precipitation of earthy phosphates. This test is the only one suitable for herbivorous urine.

*Cold Nitric Acid.*—This test is of considerable value in testing dog's urine.

A layer of concentrated nitric acid is run down the side of a test tube under a layer of urine. At the junction of the two layers a white "fluffy" ring develops if albumen be present. A crystalline layer may develop in concentrated urine; this is not indicative of albumen, but is due to compounds formed from urea and uric acid.

4. Bile Pigment.

In carnivora the presence of bile pigment is demonstrated by the play of colours at the junction of a layer of urine on a layer of concentrated nitric acid.

This test is unsatisfactory in herbivora.

Another test consists of the addition of a few drops of a dilute solution of iodine which gives a green colour with bile pigment.

5. Bile Salts.

The presence of bile salts in urine reduces the surface tension of the fluid and flowers of sulphur sprinkled on the surface of a column of urine sinks to the bottom if bile salts are present.

6. Blood Pigment.

A few drops of tincture of guaiacum are added to some urine and on the surface of the mixture is placed a layer of ozonic ether. A blue colour develops if hæmoglobin is present; this may take an appreciable time if the quantity of blood pigment is small.

Both reagents must be reasonably fresh.

7. Sugar.

For routine examinations Nylander's bismuth reagent gives satisfactory results. If a reducing sugar is present in the urine, on boiling with Nylander's reagent a black precipitate of bismuth oxide is formed. This test is devoid of fallacies due to the presence of glycuronic acid.

*Nylander's Bismuth Reagent for Sugar.*—Rochelle salt 40 grammes and bismuth subnitrate 20 grammes dissolved in 1,000 c.c. of an 8 per cent. solution of caustic soda.

Provided care is taken, Fehling's reagent gives good results. The two solutions No. 1 and No. 2 should first be boiled together and the suspected urine added and the mixture boiled. Only a prompt reaction should be considered positive. Prolonged boiling may give spurious results.

8. Indican.

A few drops of chloroform are shaken up with some urine and to this is added as much concentrated hydrochloric acid as urine. To this mixture is added, drop by drop, a dilute solution of bleaching powder.

The development of a blue-violet colour indicates the presence of indican. This colour may be removed by the addition of more bleaching powder solution. If only small amounts of indican are present the colour may appear and disappear with the addition of only one drop of the bleaching powder solution. The bleaching powder solution should therefore be added slowly.

9. Acetone.

To some urine saturated with ammonium sulphate are added a few drops of a freshly prepared dilute solution of sodium nitro-prusside and a small quantity of strong ammonia. The presence of acetone is shown by the development of a permanganate colour, the depth of the colour being proportional to the amount of acetone present.

10. Deposits.

The deposits may be obtained from urine either by centrifugalisation or by sedimentation in a conical jar. Films are fixed by heat and for most purposes staining with methylene blue suffices. The recognition of the cell content of the deposits is most satisfactory with an oil-immersion lens. The chief deposits of importance are blood cells, kidney epithelial cells, casts, bacteria and epithelial cells from the urinary passages. Crystalline deposits such as oxalates are occasionally found.

11. Estimation of Amount of Urea.

One c.c. of urine is introduced into a Doremus ureometer filled with an alkaline hypobromite solution. The urea is split up and the nitrogen evolved collected in the closed limb of the ureometer. The scale indicates the amount of urea in grammes per cubic centimetre.

The alkaline hypobromite solution should be freshly prepared by mixing equal parts of the following:—

(i) 22 per cent. solution of sodium hydroxide.
(ii) A solution containing sodium bromide 125 grammes, bromine 40 c.c. and water to 1,000 c.c.
(iii) Distilled water.

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# THE ANALYSIS OF URINE AS AN AID TO DIAGNOSIS

THAT urine analysis as an aid to diagnosis is important is generally admitted. It is felt, however, that the extent of the information to be obtained is not adequately appreciated and it is for this reason that Professor Boddie's paper on "The Interpretation of Urine Analysis in Diagnosis," published elsewhere in this issue, is so welcome.

The majority of the tests applied to urine are simple in character, taking relatively little time to perform, and they require a comparatively small amount of inexpensive equipment for routine adoption. The examination of a single sample from a patient is not sufficient, as such a procedure may lead to an error in diagnosis, following upon the discovery of an abnormality which may only be of a temporary nature—a fact which is illustrated in Professor Boddie's paper by reference to the presence of a temporary glycosuria in dogs after a heavy meal of carbohydrates. Frequent examination of samples is also likely to give valuable information regarding the progress of a disease. An essential feature is that the result of an analysis should be considered in conjunction with the case history, and symptoms, and not as a separate entity.

These considerations lead naturally to the conclusion that the clinician himself should, whenever possible, examine urine samples from his patients. The tests, as we have already noted, are relatively simple. Their interpretation may, however, be found a more difficult task. This difficulty is largely overcome by experience which is a natural sequel to diligent practice. Once again we are prompted to draw attention to the value of making *post-mortem* examinations as a means of gaining knowledge.

In conclusion, we would remind our readers that it would be most valuable if they would enable us to publish, as a sequel to Professor Boddie's paper, a series of case records having a bearing on this important subject.

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"Someone in Washington placed orders for 945,000 saddles for our army's 86,000 cavalry horses," writes Mr. Wilbur Forrest, a leading American journalist, in "Behind the Front Page." "Included in the general order were the bridles and, among other things, 2,800,000 halters, 1,500,000 horse brushes, 2,000,000 feed bags, 1,000,000 horse covers, and 195,000 branding irons. The irons were never delivered. Their story is of particular interest as an example of the way in which war jostled the American business sense."

# THE ATTESTED HERDS SCHEME OF THE MINISTRY OF AGRICULTURE

(1) EXPLANATORY MEMORANDUM; (2) RULES

The arrangements made by the Minister of Agriculture and Fisheries, and approved by the Treasury, for the purposes of Section 9 of the Milk Act, 1934, are indicated in the documents reproduced below.

These arrangements came into operation in England and Wales on February 1st, 1935, the day appointed by the Minister of Agriculture and Fisheries and the Secretary of State for Scotland for the beginning of the period of four consecutive years referred to in Section 9 of the above-mentioned Act.

## Explanatory Memorandum on the Tuberculosis (Attested Herds) Scheme for England and Wales

OFFICIAL CERTIFICATION OF CATTLE HERDS FREE FROM TUBERCULOSIS

1. *Herds eligible for Official Test and Conditions of Certification.*—The Ministry is prepared to undertake the testing with tuberculin of herds of cattle of any registered producer in England and Wales, as explained below, and if no reactors are found, to issue Certificates of Attestation in respect of the individual herds, subject to the observance of certain Rules by the owners of the herds. In every instance all the cattle (including calves) comprised in the herd will be submitted to the test. The procedure will be as indicated in the following paragraphs. The term "registered producer" means a producer registered under the Milk Marketing Scheme.

2. An owner who has taken steps to eradicate the disease from his herd is entitled to make an application to the Ministry for an official test provided that no reactors were found in the herd on the occasion of the last two tests if carried out with an interval of not less than six and not more than twelve months between the tests and if the last of these two tests was carried out not more than twelve months before the date of application. The application should be supported with certificates to this effect signed by the veterinary surgeon who carried out the tests on behalf of the owner. The official test will not be carried out earlier than a minimum of 60 days from the date of the second of the two above-mentioned tests applied by the owner's veterinary surgeon.

3. *Date of Commencement and Period of Validity of Certificate of Attestation.*—A Certificate of Attestation will be valid as from the date of application or from the date of commencement of the scheme or from the date of expiration of a period of 60 days from the date of the last test applied on behalf of the owner, whichever of these three dates is the latest. A certificate will be valid for one year.

4. *Renewal of Certificate.*—A Certificate of Attestation will be renewed annually, if desired by the owner of the herd, after a further official test of all cattle in the herd provided that no reactors are disclosed, and the Ministry is satisfied that the herd, and the premises on which it is located, continue to be suitable for attestation. If reactors are found, the renewal of the Certificate of Attestation will be suspended, and the following restrictions and requirements will operate,

but the herd will not be removed from the Register mentioned in paragraph 7 of this memorandum unless and until the Certificate is cancelled under the provisions of (*e*) below.

(*a*) The reactors will be immediately isolated and disposed of by the owner as quickly as possible and the premises thereafter disinfected. During the period of suspension non-reactors from the herd will not be permitted unrestricted entry into another attested herd.

(*b*) The non-reactors must be submitted to further official testing, such tests to take place not earlier than 60 days from the date of completion of the disinfection of the premises.

(*c*) If no reactor is revealed as the result of such retest, the Certificate of Attestation will be renewed for a further period of six months.

(*d*) If any reactor is revealed as the result of the retest, it must be immediately removed from the herd and the premises again disinfected. A second official retest will then be carried out at the expiration of 60 days from the date of completion of the last disinfection of the premises.

(*e*) If any additional reactor is found as the result of the second retest, the herd will be removed from the Register of Attested Herds and the Certificate of Attestation will be cancelled; and no further official test will be made until the conditions laid down in paragraph 2 of this memorandum are complied with, when the question of reinstatement will be considered.

(*f*) If no reactor is found as the result of the second retest, the Certificate of Attestation will be renewed for a further period of six months.

(*g*) During the period of suspension of the renewal of the Certificate of Attestation the Rules applicable to Attested Herds will continue to operate unless and until the Certificate is cancelled in the manner indicated in (*e*) above.

5. *Cost of tests.*—Tuberculin testing by or on behalf of the Ministry will be limited to the official tests referred to in this memorandum, and will be carried out without charge to the owner. These official tests will exclude the preliminary tests applied on behalf of the owner preceding his application to the Ministry as described in paragraph 2 of this memorandum.

6. No claim will be entertained against the Minister in respect of any loss occasioned by the death, injury, or illness, however caused, of an animal submitted to any tests by or on behalf of the Minister.

7. *A Register of Attested Herds* comprising particulars of herds in respect of which a Certificate of Attestation has been issued by the Ministry of Agriculture and Fisheries will be kept by the Ministry and published from time to time.

8. *Bonus.*—There will be paid to the owners of herds appearing on the Register, a bonus of one penny per gallon for all milk sold from such herds under the provisions of the marketing scheme of the Milk Marketing Board as from the date on which the Certificate of Attestation is valid, subject to the observance by the owners of such herds of the Rules applicable to Attested Herds.

9. Forms of Application for a Certificate of Attestation under this scheme may be obtained from the Secretary, Ministry of Agriculture and Fisheries, Whitehall Place, London, S.W.1.

## Rules Required to be Observed in the Case of Herds Certified by the Minister of Agriculture and Fisheries under the Tuberculosis (Attested Herds) Scheme (England and Wales).

1. *Admission to Official Register of Attested Herds.*—The owner of a herd proposed for admission to the Register of Attested Herds kept by the Ministry of Agriculture and Fisheries will be required:—

(*a*) to satisfy the Ministry that he is a "registered producer," *i.e.*, a producer registered under the Milk Marketing Scheme;

(*b*) to satisfy the Ministry that the management of the herd and the conditions in which it is kept are suitable for the observance of these Rules;

(*c*) to produce the following evidence of the freedom of the herd from tuberculosis, namely, certificates signed by a veterinary surgeon to the effect that the herd has been tested with tuberculin on two occasions with an interval of not less than six and not more than twelve months between the tests—the last of the two tests being carried out not more than twelve months before the date of application to the Ministry for attestation—and that no reactors were found as the result of either of these two tests;

(*d*) to give a written undertaking that he will to the best of his ability abide by and observe these Rules and any amendment or addition thereto which may be made by the Minister.

If these requirements are satisfactorily met an official test of all animals in the herd will be made by the Ministry free of charge with a view to the herd being added to the Register of Attested Herds and the issue by the Ministry of a Certificate of Attestation if no reactors are found.

2. *Issue of Certificates of Attestation.*—The Ministry will issue to the owner of a herd added to the Register of Attested Herds a Certificate of Attestation and the herd will be known as an "Attested Herd."

3. A Certificate of Attestation is valid for one year. It will be renewed annually, if desired by the owner of the herd, after a further official test of all cattle in the herd provided that no reactors are disclosed, and the Ministry is satisfied that the herd, and the premises on which it is located, continue to be suitable for attestation. If any reactor is found, the renewal of the Certificate of Attestation will be suspended and the following restrictions and requirements will operate:—

(*a*) The reactors must be immediately isolated and disposed of by the owner as quickly as possible and the premises thereafter disinfected. During the period of suspension non-reactors from the herd will not be permitted unrestricted entry into another Attested Herd.

(*b*) The non-reactors must be submitted to further official testing, such tests to take place not earlier than 60 days from the date of completion of the disinfection of the premises.

(*c*) If no reactor is revealed as the result of such retest, the Certificate of Attestation will be renewed for a further period of six months.

(*d*) If any reactor is revealed as the result of the retest, it must be immediately removed from the herd and the premises again disinfected. A second official retest will then

be carried out at the expiration of 60 days from the date of completion of the last disinfection of the premises.

(*e*) If any additional reactor is found as the result of the second retest, the herd will be removed from the Register of Attested Herds and the Certificate of Attestation will be cancelled; and no further official test will be made until the conditions laid down in Rule 1 (*c*) are complied with, when the question of reinstatement will be considered.

(*f*) If no reactor is found as the result of the second retest, the Certificate of Attestation will be renewed for a further period of six months.

(*g*) During the period of suspension of the renewal of the Certificate of Attestation, the Rules applicable to Attested Herds will continue to operate unless and until the Certificate is cancelled in the manner indicated in (*e*) above.

4. *Records.*—The owner of an Attested Herd shall keep accurate records, in the form of the Schedule annexed hereto, of:—

(*a*) All cattle on the premises comprising the Attested Herd stating breed, age, sex and the marking, and the herd book number and name of animal, if any;

(*b*) all births and deaths of cattle on the premises specified in the Certificate including cattle slaughtered; and

(*c*) all bovine animals moved on to or off the premises specified in the Certificate, including the addresses of the premises from or to which they were so moved, the name of the vendor or purchaser as the case may be, if available, the date of movement and the purpose of such movement.

5. *Marking.*—Every animal in an Attested Herd shall be marked by the owner in a manner approved by the Ministry or an Inspector of the Ministry.

6. *Regulation of Movement of cattle to and from the premises of an Attested Herd.*—The following movements of cattle on to or from the premises of an Attested Herd are prohibited unless such movements are authorised in each case by a written permit issued by an Inspector or other officer of the Ministry containing such conditions as are prescribed in the permit, namely:—

(a) *Movement on to the premises of an Attested Herd from any other premises.*

(b) *Movement from the premises of an Attested Herd to*

(i) the premises of another Attested Herd:

(ii) a market specially reserved and authorised by the Minister for the exposure of cattle from Attested Herds where no other cattle and no pigs are exposed:

(iii) an agricultural show.

7. *Conditions to be attached to all permits.*—The following conditions will be included in all permits authorising the movement of an animal issued under these Rules, namely:—

(*a*) During the movement the animal shall not be allowed to come into contact with any other cattle not being moved with a similar permit granted in accordance with these Rules, nor with any swine.

(*b*) The vehicle in which the animal is conveyed shall be cleansed and disinfected in the following manner immediately before the animal is placed in it:—

(i) in the case of a *road vehicle.*—

The floor, roof and sides of the inside of the vehicle, and all other parts thereof with which such animal or any fodder, litter or other matter may come in contact, shall be scraped and swept, and the scrapings and sweepings and all dung, sawdust, litter and other matter shall be effectually removed from contact with animals; the same parts of the vehicle shall then be thoroughly washed or scrubbed or scoured with water; and then be disinfected by being thoroughly coated or washed with a disinfectant approved by the Ministry of Agriculture and Fisheries.

(ii) in the case of a *railway vehicle.*—

The vehicle shall have been cleansed and disinfected in accordance with Article 24 of the Transit of Animals Order of 1927, since it was last used for the conveyance of animals, and in addition to such cleansing and disinfection it shall receive a further coating or washing of the floor, roof and sides of the inside with a disinfectant approved by the Ministry of Agriculture and Fisheries immediately before an animal from an Attested Herd is placed in it.

8. *Additional conditions to be inserted in certain cases for movement on to premises of an Attested Herd.*—The following additional conditions will normally be inserted in permits for the movement of cattle on to the premises of an Attested Herd from any premises except from the premises of another Attested Herd, or from a market specially reserved and authorised by the Minister for the exposure of cattle from Attested Herds where no cattle and no pigs are exposed, or from an agricultural show where special accommodation has been set apart for cattle from Attested Herds:—

(*a*) the animal must be certified by a veterinary surgeon to have passed the tuberculin test within 14 days prior to movement;

(*b*) the animal shall on arrival on the premises be isolated from the remainder of the Attested Herd for a period of 60 days, provided that during that period only such contact with other animals in the herd shall be allowed as is necessary for breeding purposes;

(*c*) at the end of the said period of 60 days the animal shall pass a further tuberculin test carried out by a Veterinary Inspector of the Ministry before it is added to the main herd; if the animal reacts it must forthwith be removed from the premises and the part of the premises occupied by it must be disinfected.

9. A permit for the movement of an animal from an Attested Herd to an agricultural show will be granted only in a case where special accommodation has been set apart thereat for animals from Attested Herds. Such a permit will be available for movement to one or more than one show providing special accommodation as above indicated, but any animal so moved will be readmitted to the same or to another Attested Herd only on condition that the animal is submitted to an official re-test as soon as practicable after a period of 60 days has elapsed since the date of return to or arrival in the herd; if the animal reacts it must forthwith be removed from the premises and the part of the premises occupied by it must be disinfected.

10. *Premises.*—The fences dividing the premises specified in the Certificate of Attestation from adjoining land shall be maintained to the satisfaction of the Ministry in such a condition

as to prevent the infection of the Attested Herd by cattle on the adjoining land.

11. *Swine.*—With a view to prevent the risk of infection from swine kept on the same premises as the Attested Herd, the Ministry may by notice in writing require the tuberculin testing of such swine by a veterinary surgeon at the owner's expense, or impose such limitation on the free movement of such swine within the premises as he may consider necessary. Any swine that react to the test shall be disposed of as quickly as possible and that part of the premises concerned shall be disinfected.

12. *Use of Milk, etc., for feeding animals.*—No milk or dairy by-product shall be brought on to the premises of an Attested Herd for feeding to animals except direct from the premises of another Attested Herd unless such milk or dairy by-product is pasteurised or sterilised by heat.

13. *Entry and examination by Inspector.*—The owner of an Attested Herd shall, while a Certificate granted under this scheme in respect of the herd remains in force, give all reasonable facilities for the entry of an Inspector of the Ministry into the premises for the purpose of an examination of the premises, and of the animals thereon, and of the records required to be kept or permits issued for the purposes of this scheme, and for the testing of the animals. The owner shall furnish to the Inspector all such information as may reasonably be required by the Inspector for the purposes of the administration of the Scheme.

14. *The Certificate of Attestation may be cancelled* by the Minister at any time at his discretion if in the judgment of the Minister the owner of the herd fails to observe any of these Rules or any additions or amendments thereto, and the Certificate shall thereupon cease to operate: provided that in lieu of the cancellation of the Certificate of Attestation, part of the bonus payable to the owner of the herd for milk sold from the Attested Herd may be withheld for such period as may be determined by the Minister.

15. *Consent of Ministry to unofficial tuberculin tests.*—No animals in an Attested Herd shall be submitted to the tuberculin test without the consent of the Ministry. Such consent will not be withheld to a test carried out at a reasonable period before or after an official test.

16. The Ministry may, if it thinks fit, at any time cause an official retest of all or any animals in the herd to be made. If any reactor is found, the Certificate of Attestation will be suspended and the Attested Herd will become subject to the provisions of paragraphs (*a*) to (*g*) of Rule 3.

17. No claim will be entertained against the Minister in respect of any loss occasioned by the death, injury, or illness, however caused, of an animal submitted to any tests by or on behalf of the Minister.

18. *Vaccination.*—No animals in the herd shall be vaccinated against tuberculosis during the period of validity of a Certificate of Attestation.

19. These rules may be extended by the addition of other Rules or may be amended by the Minister as may in his opinion be deemed necessary or desirable. All such additions and amendments will be immediately notified by the Ministry to the owners of all Attested Herds.

Ministry of Agriculture and Fisheries.

*January*, 1935.

Schedule

Form of Record required by Rule 4 to be kept by Owner of an Attested Herd (*Including Specimen Entries*)

Name of Owner of Attested Herd.....

Full address of premises where the herd is kept (specifying parish and county).....

.....

| No. in record. | Herd Book No. and name of animal, if any. | New Entrants. | | | Breed. | Age. | Sex. | Mark. | Manner and Date of Disposal. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date. | Births. | Purchases, giving place of origin. | | | | | Date. | Precise destination. |
| 1 | | | | | | | | C.D.12(Ear Tattoo) | 1st July | Sold in open market at ..... |
| 2 | | | | | | | | | 1st Aug. | Attested Herd of Mr..... at ..... |
| 3 | | | | | | | | | 1st Sept. | ..... Agricultural Show at... ..... |
| 4 | | | | | | | | | 1st Oct. | Special Market at... ..... |
| . | | | | | | | | | | |
| . | | | | | | | | | | |
| . | | | | | | | | | | |
| 42 | ax | 30th Jan. | — | Bull from A.B. of Manor Farm, ... .....Glos. | | 18 months | M | XY 98 | etc. | etc. |
| 43 | bx | 1st June | From cow No. 3 | — | | — | F | etc. | etc. | etc. |
| 44 | cx | 1st July | — | Cow from Special Market at..... | | 2 years | F | etc. | etc. | etc. |

# Clinical Communications

## TWO CASES OF ŒSOPHAGEAL OBSTRUCTION IN THE DOG

NORMAN P. MALE, M.R.C.V.S., B.Sc.(EDIN.), D.V.S.M.

CASE 1.

*Subject.*—Four years old male Scottie.

*History.*—In the absence from home of the dog's mistress, the attendant, who had been looking after the dog, first noticed him to be off colour, and as he thought suffering from indigestion. This he considered only a temporary malaise due to the fact that the dog's owner was away, and he did not, therefore, seek professional advice for several days.

*Examination.*—The dog seemed very dull. The pulse was normal, but the respiration was noticed to be somewhat shallow. The temperature was 102.4°. Gases were frequently regurgitated, and spasms of pain were observed at intervals. Vomition occurred within a few minutes of taking food, and only liquids could be retained.

*Diagnosis.*—A foreign body was immediately suspected, and an X-ray examination was made. This revealed the presence of an obstruction in the œsophagus situated in the posterior end of the thoracic cavity just anterior to the diaphragm. This can be clearly seen in the accompanying plate.

*Treatment.*—It was considered necessary to remove the obstruction without further delay, and an operation was, therefore, performed. The anæsthetics used were nembutal and a very little chloroform. An incision was made in the mid-line in the anterior region of the abdominal cavity. The stomach was brought to the surface and a small incision made in its wall near the cardiac end. Long-necked forceps were introduced into the stomach and through the cardiac orifice, and the foreign body was, with some difficulty, withdrawn. It consisted of an irregular piece of bone, composed chiefly of cancellous tissue, and about the size of half-a-crown in diameter. The stomach and abdominal wall were carefully disinfected and sutured.

*Sequelæ.*—The conclusion arrived at was that the bone had become lodged, and had remained unnoticed for some time. When the operation was performed, considerable necrosis of the œsophageal wall had taken place and the chances

CASE I: Foreign body seen in œsophagus in chest cavity.

of recovery were, therefore, deemed slight. In due course, the animal succumbed, and on *post-mortem* examination, complete perforation was found in several places.

*Conclusions.*—It is interesting to note that it is possible to remove a foreign body, situated in this position, *via* the stomach. If the operation had been performed sooner there would have been a much better chance of a favourable result.

. . . . .

Case 2.

*Subject.*—Male cross-bred terrier aged about one year.

*History.*—The owner had given the dog some raw bones to eat, and shortly after the animal showed all the typical symptoms of an œsophageal obstruction.

*Examination.*—The dog seemed generally uneasy. On giving a small quantity of meat, vomition occurred immediately, and on palpating the œsophagus the obstruction could be felt at the entrance to the chest cavity just anterior to the first pair of ribs and extending down between them.

*Diagnosis.*—An X-ray examination was made, and this confirmed the preliminary findings. The obstruction can clearly be seen in the accompanying plate.

*Treatment.*—It was decided to operate, and, using chloroform anæsthesia, an incision was made in the mid-line over the obstruction. The œsophagus was exposed, and an incision about two inches long was made in its wall. The foreign body, consisting of the end of a rib bone, was removed, and the œsophageal wall joined again with close interrupted sutures. The skin wound, however, was only partially closed to allow free drainage.

*Result.*—The patient made an uninterrupted recovery and was discharged in a fortnight.

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## BLADDER CALCULUS IN A YOUNG CAT

DIANA CAMPBELL, M.R.C.V.S.
Hanwell

*Subject.*—Neuter cat, seven months old, about six lb. body weight.

*History.*—The cat was castrated here at five months old, on November 26th, 1934. On January 26th, 1935, it was taken to another veterinary surgeon, having just died. The owner complained

Case II: Foreign body seen in œsophagus in neck at entrance to chest cavity.

that it had been ill " for some time," passing blood in the urine, and he blamed the castration. No more information could be obtained from the owner, except that the animal had not been treated by anyone while ill. The other practitioner sent the body back here with the history.

*Post-mortem Examination.*—The castration wound had healed perfectly. The bladder was opened and in it was found a calculus about the size of a large pea, made up of a collection of hundreds of small pieces of gravel. The bladder itself was thickened and congested, but empty of urine.

All other organs were apparently normal.

*Discussion.*—The only reason for recording the case is the extreme youth of the cat. Unfortunately there is no information regarding the cat's diet.

## SIXTH WORLD'S POULTRY CONGRESS

A meeting of the executive of the International Poultry Science Association was held recently in Berlin for the purpose of determining the programme of the Sixth World's Poultry Congress which is to take place in that capital next year.

The general assembly and sections of the Congress will be held in what was formerly the Prussian House of Parliament, in the centre of the city. For the exhibition there have been allocated by the city authorities the exhibition grounds and buildings, where there is ample space for display and demonstration both in the buildings and outside.

The object of these Congresses is to bring together all the various poultry interests and to promote international relations for the exchange of knowledge that will advance the industry. The Congresses take place every three years, the first being held in Holland in 1921, others following in Spain, Canada, England and, lastly, Italy.

The President of the Berlin Congress will be Herr Karl Vetter, who is President of the German Association of Small Animal Breeders. The General Secretary will be Dr. Kupsch, and the administrative offices are located at Kochstrasse 6-7, Berlin, S.W.68. Dr. te Hennepe, a veterinarian, is Hon. Secretary, and the committee of management has been drawn from well-known members of the German poultry industry.

The Congress will be held from July 31st to August 9th, 1936, and in addition to the 18 papers that are to be presented to general meetings, there will be 100 papers spread over the following sections: (1) General, Education and Organisation, (2) Physiology and Nutrition, (3) Breeding and Inheritance, (4) Hygiene and Disease, (5) Domestic Problems and (6) Rabbit Breeding.

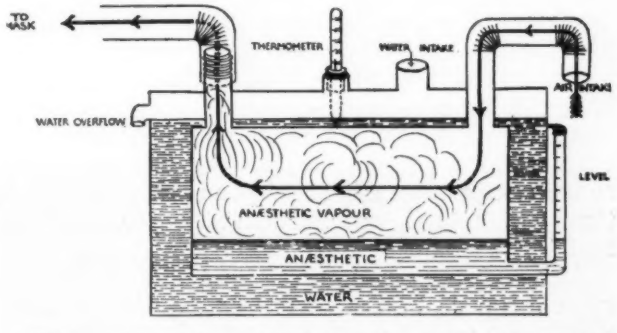
Among lectures to be given to the Section of Hygiene and Disease, there will be contributions on: Fowl paralyses and their relation to leucosis; Enteritis of fowls with reference to food poisoning; Parasitic diseases.

The German Minister of Agriculture is interesting himself in the project and it is anticipated that there will be strong representation of all poultry interests from all parts of the world.

# Abstracts

**[Two New Appliances for the Production of General Anæsthesia in Domestic Animals.** (Trans. title.) Henkels, P. (1934.) *Deuts. tierärtzl. Wschr.* No. 5. 65-68.]

Up to the present volatile anæsthetics are considered to be the most suitable agents for the production of general anæsthesia in domestic animals, but the method most commonly used for their administration, *i.e.*, pouring the anæsthetic on to a sponge or wad of cottonwool, is totally incorrect, because an unknown concentration of anæsthetic vapour which cannot be controlled and which can cause grave injury to the mucous membranes is formed inside the air-passages. The author has attempted to devise a simple and cheap apparatus which will produce deep general anæsthesia in a short time without causing undue injury to the air-passages from chemical or thermal stimulation.




The apparatus consists of a closed metal container which is provided with two openings, one for the entrance of air and the other for the exit of the anæsthetic vapour, and an external graduated tube which indicates the level of the anæsthetic solution. The whole is enclosed by a water-jacket provided with a thermometer. The amount of anæsthetic vapour produced is mainly dependent on the area of the space above the level of the solution, and the temperature. This latter, and hence the concentration of anæsthetic vapour, can be easily and quickly regulated by an attendant running hot or cold water into the water-jacket as required. The apparatus is connected to a Richter mask provided with inspiration and expiration valves. On inspiration, air is drawn through the container over the surface of the anæsthetic without causing any disturbance to the patient's respiration, which is not the case when air is blown through an anæsthetic. The minimum attention of the operator is required to ensure an even, deep and safe general anæsthesia and the apparatus can be used with any species of patient.

For use in clinics, the author has constructed an apparatus which consists essentially of an oxygen cylinder and a container for the

anæsthetic vapour. Vaporization is accomplished by drawing the anæsthetic into a vacuum where admixture with oxygen takes place, and collecting the mixture in the container. By means of various screws the intake per minute and the supply of the anæsthetic solution can be easily regulated. The size of the container is 50 litres and the apparatus is designed only for use with the larger domestic animals.

J. A. N.

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[**Epidural Anæsthesia in Bovines.** (Trans.title.) Dermont. (1934.) *Rec. de Méd. vét. de l'Ecole d'Alfort. 110.* 8. pp. 463-466.]

The author disagrees with Dehecq (*ibid. 109.* 4. pp. 208-210). He claims that meningitis is not produced by a simple epidural injection of cocaine, but by its admixture with adrenalin (renders the part anæmic and liable to infection from local processes, while at the same time retarding anæsthetic effect), and by intra-uterine injections within two days of its use. These injections cannot be expelled, through lack of uterine contractions in this period, and the downward deposition of the horns of the uterus. When necessary he advises antisepsis of the genital passages by bougies or ointments.

According to the reaction required, the dose varies as does site of injection. He uses 0·25 or 0·5 grammes cocaine in 4 per cent. concentration, which is isotonic. If in stronger solution toxicity is proportionally increased.

Although most writers claim a dilating effect upon the neck of the uterus, the author thinks this is not so but merely a lack of tonicity.

If novocaine (procaine—Ed.) is substituted for cocaine, uterine contractions are scarcely lessened (of use in simple, easily reduced malpresentations).

His remarks relate to over one hundred successful applications of the method.

C. V. W.

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[**Several Aspects of Bovine Milk Production in France.** (Trans. title.) Dechambre. (1934.) *Rec. Méd. vét. de l'Ecole d'Alfort. 110.* 4. 193-201.]

Of the fifteen million bovines in France, eight million are cows, and upwards of six million of these latter are kept for milk production. Of a total of 130 hectolitres of milk, 20 per cent. is used for calf rearing, 33 per cent. is sold as milk, and 47 per cent. is used for butter and cheese making. The average yield is 2,000 to 2,150 litres (*c.f.* Denmark with 1,335,000 cows averaging 3,050 litres; and the U.S.A. cows giving an average of 1,680 litres in 1916, which was raised to 2,140 litres by 1926). The average yield in France is less than in Sweden, Denmark and Switzerland. The most striking thing about French milk production, however, is not its possible augmentation, but the great variation of its production.

The author is concerned with stimulating production, because, whilst the average milk production remains much the same as earlier, the demand for milk and its products is increasing, particularly in the large industrial centres, notably Paris. The large area supplying Paris does comparatively little breeding of cattle, buying newly calved cows or in-calf heifers, and selling them for butchers' meat at the end of their lactation period. Some regions in this area in close proximity to Paris still retain the same rural characteristics as in the year 1880.

Sustained efforts to improve the milk supply in France have everywhere been successful. This applies not only to places or breeds in which advanced methods of production have long been adopted, but to the less densely populated centres, where inter-communication is difficult (mountainous regions). The selection of cows and bulls has played a most important part as regards the quality and quantity of the milk produced.

Cattle rations are now better, more regular, better mixed and adapted to individual requirements. Lastly, milk control as practised by the large Syndicates of the Agricultural Societies has shown the benefits to be derived from proper milking methods and correct handling of the products at the farm.

Briefly, the choice of suitable animals, good feeding, and better hygiene, should achieve considerable improvement in milk production, in keeping with the growing importance of milk as a human food.

C. V. W.

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[**Consideration of the Lactiferous Duct in Mastitis of Dairy Cows.** Hopkirk, C. S. M. (1934.) *Austral. Vet. J. 10.* 4. pp. 143-145.]

The lactiferous duct is normally about half-an-inch long, the inner orifice opening into the wider canal which ascends the teat to join the lactiferous sinus, but a short duct (an anatomical defect or one caused through injury to the teat end) which permits passage of organisms to the sinus, has often been found in association with acute mastitis. Mastitis may be an inflammation of the main gland, often with marked change in its milk, but less obvious are those conditions in which milk has a high leucocyte content and various organisms can be detected by culture although no naked-eye change can be seen. Many of these represent primary infection of the lactiferous duct. The flora of the teat ducts is usually of one type or one predominant type and the leucocyte response depends on the organism present. Certain corynebacteria (as described by Steck, etc.) generally produce little leucocytosis and only rare cases of true mastitis.

Cultures made from special swabs introduced in the duct gave cultures similar to those from milk. If a teat tube was used to collect milk the number of cultivable organisms was much less than if milk was drawn normally. If no leucocytes were present in the cream layer no germs were recoverable by swab from the duct (except non-pathogenic organisms such as corynebacteria). Experimental infection of the teat ducts by various organisms and germicidal treatment are detailed.

Of seven ducts into which streptococci were introduced, four remained infected, and one case developed into acute mastitis when drying off; the latter case supports the author's theory that duct infection is a precursor of mastitis.

The experiments he describes show that leucocytes gain access to the milk stream in varying degree according to the organism (probably through glandular acini and not the wall of the invaded duct), should invasion of the duct be attempted.

C. V. W.

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[**Elucidation of the Nature of Milk Fever.** Zimmermann, K. (1934.) *Wien. tierärztl. Mschr. 21.* 8 and 9.]

This is an abbreviated version of the author's inaugural dissertation presented for the examination for Dr. med. vet.

The literature on the etiology of milk fever and physiological research pertinent to the problem is reviewed and the author describes his experiments on a few ewes and rabbits very soon after parturition.. He was working on the assumption that milk fever is due to hyperfunction of the pituitary body and adrenal glands and puts forward this suggestion by reason of his results.

He gave his experimental animals, which had all just completed normal parturitions, a series of injections of pituitary extract (presumably whole gland) and adrenalin and thereby caused a clinical picture similar to that of milk fever. (The conclusions are open to criticism on various grounds.) J. E.

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[**The Incidence in Great Britain of *Br. abortus* Infection in various Domestic Animals as indicated by the Agglutination Test.** Priestley. (1934.) *J. Comp. Path. and Therap.. 47.* 3. 181-189.]

Three strains of *Br. abortus* were used in the preparation of antigen for the agglutination tests; all were in the smooth phase as indicated by the thermo-agglutination test. Horse and cattle sera were tested against antigen prepared from bovine strains, but some of the pigs' sera were tested against a porcine strain. All antigen was standardised, by opacity, to a density equivalent to Brown's opacity tube number 6, and, as finally prepared, the suspensions were agglutinated to the same titre by a standard serum. Serum dilutions ranged from 1 : 10 upwards in geometric progression, the end-titre in all instances being ascertained. Tests were incubated in a dry incubator at 37·5°C. for 18 to 24 hours.

Samples of sera from 1,210 cattle, 255 horses, 517 pigs and 348 sheep were collected at the Metropolitan Cattle Market, London, and from 264 army horses, and 50 samples from a miscellaneous group of horses were also examined. The numbers of these samples are grouped according to agglutination end-titres. From the figures, it is seen that 79 per cent. of cows, 92 per cent. of heifers, and 97 per cent. of steers have agglutinin titres of less than 1 : 20; whilst on the average 77 per cent. of horses have titres below this level. Except for one pig and one sheep all samples in these two categories had titres below 1 : 20. From this investigation " it is estimated that in this country not less than 20 per cent. of cows have antibodies specific to *Br. abortus* in their blood," also " that in this country 5 to 15 per cent. of horses have specific antibodies in their blood "; and " there is no evidence that in this country swine or sheep suffer from *Br. abortus* infection."

The figures collected regarding horse sera, when submitted to statistical analysis, showed that there was no significant difference in the blood titres shown by members of the two sexes. A relationship between the ages of horses and their end-titres is demonstrated.

E. J. P.

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[**Studies of Five *Brucella abortus* (Bovine) Strains as Immunising Agents.** Cotton, W. E., Buck and Smith. (1934.) *J. Amer. Vet. Ass. 38.* 2. 232-247.]

Previous experiments suggested that a strain of *Br. abortus* having a low virulence (as judged by its infectivity for guinea-pigs) might prove a safe and efficient live vaccine for inoculation into bovines.

The value of live vaccines prepared from two avirulent strains of *Br. abortus* was compared with that of two vaccines prepared from strains of low virulence; the virulence of each strain, at the time of preparation of the vaccine, was determined by inoculation into groups of twelve guinea-pigs. Each vaccine was inoculated subcutaneously in a dose of 10 c.c. into four healthy heifers, the two slightly virulent vaccines were administered to two open cows. Eight healthy heifers were retained as controls. Five months later all animals were exposed to infection, virulent *Br. abortus* culture being instilled on to the conjunctiva of each animal. Of the eight which received avirulent vaccine five became infected on exposure, though only two aborted. Of the nine survivors in the group which received slightly virulent vaccine, three

became infected on exposure. All eight control animals developed infection.

In a further experiment one avirulent, one slightly virulent, and one highly virulent strain were compared. Of eleven animals receiving the avirulent vaccine, only two survived subsequent exposure; of nine receiving a low virulence vaccine all survived subsequent exposure; similar results were obtained with the highly virulent vaccine. Of eleven control animals six became infected after exposure. The complete failure of the avirulent vaccine in this second experiment is probably due to the entire loss of all traces of virulence as the result of excessive subculture.

From the foregoing experiments it is concluded that "the degree of immunity conferred by a *Br. abortus* strain so low in virulence as to be practically free from danger when used in the preparation of a vaccine to be administered to unbred cattle, appeared quite as pronounced as that induced by a much more virulent strain, the use of which for vaccine preparation has serious objections.

E. J. P.

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**[Preliminary Studies in the Complement-Fixation Test for the Diagnosis of Bovine Anaplasmosis.** Rees, C. W., and Mohler W. (1934.) *J. Amer. Vet. Med. Ass.* 85 N.S. 5. 669-674. (7 refs.)]

In the past, attempts to prepare antigen for complement-fixation tests from spleens, livers and other organs of animals infected with anaplasmosis have been unsuccessful. Definite antigenic value was, however, demonstrated in the washed centrifugate of distilled-water-laked blood from a splenectomised cow during the height of the anaplasmosis reaction. The results obtained were encouraging, but sufficient antigen could not be obtained for extensive investigations. Attention was, therefore, directed to the possibility of using infected ticks as a source of antigen.

Anaplasmosis can be transmitted experimentally by a number of ticks including *Rhipicephalus sanguineus, Dermacentor variabilis, D. andersoni* and *Boöphilus annulatus.* Antigens were prepared from *R. sanguineus* and *B. annulatus* and the results are given in detail. It was shown that antigen made from infected nymphs and adults of *R. sanguineus* gave positive complement fixation against serum from an infected cow. Antigen occurred in nymphs that engorged on a clinical case and appeared to increase during engorgement of the adults derived from these nymphs. The antigen was not present in adults engorged as larvæ, nymphs and adults on rabbits.

Engorged females of *B. annulatus* obtained from piroplasmosis-infected cattle contained antigen against both pure anaplasmosis serum and serum of an animal known to be affected with piroplasmosis but from which anaplasmosis could not definitely be excluded.

J. S. S.

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**[Treatment of Wounds by a Cytophylactic Antiseptic obtained by Electrolysis.** (Trans. title.) Coquot and Vaslot. (1934.) *Rec. Méd. vét. l'Ecole d'Alfort. 110.* 9. pp. 513-516. (1 fig.)]

The authors describe in detail a portable apparatus that can be plugged into any electrical supply, for the conversion of physiological saline solution into "electroserum" by electrolysis.

A pump is embodied in the apparatus so that a varying delivery of the "electroserum," from a strong jet to a fine spray, is effected through a special nozzle and the temperature can be controlled by movement of the electrodes. The "electroserum" contains 60 to 80 mgm. of oxidising elements (available almost in nascent form, and being oxygenated compounds of chlorine and ozone) per litre, while Dakin's solution contains 450-500 mgm. of hypochlorite of soda per litre. "Electroserum" is a neutral solution. The apparatus has been used freely in the clinic of the Alfort Veterinary College with very encouraging results.

It can be employed as a mechanical cleanser of deep suppurating and gangrenous wounds without causing any pain, and has been found effective in the treatment of indolent wounds in cats which would otherwise have proved fatal.

The time necessary to convert the saline into "electroserum" of a temperature of 37° or 40° is only 30 or 40 seconds. C. V. W.

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**[Experimental Studies of *Post-mortem* Bacterial Invasion in Animals.** Burn, C. G. (1934.) *J. Infect. Dis. 34.* 3. 388.]

This paper records the results of experiments made to find out the invasive power of a series of organisms, when injected in known quantities into the body cavities and tissues of recently killed animals, and the results of cultivation of the organisms from the organs after varying periods of time, and the influence of temperature on the invasive power of the organisms.

The animals used were healthy guinea-pigs and rabbits killed by means of cardiac puncture or some similar method.

The right pleural cavity was the usual site of inoculation. The author found that *B. coli,* staphylococci, and *B. welchii* were capable of invading the tissues within five to 48 hours after death when the body was kept at 25°C. and he found also that a large series of pathogenic and non-pathogenic organisms failed to invade the tissues even when the body was kept at 37°C.

By keeping the body at 10°C. *B. coli* and *B. welchii* were prevented from spreading even after 96 hours. B. B-J.

[**Follicular Mange: A Suggested Treatment of the Secondary Bacterial Invasion.** Woodrow, C. E. (1934.) *Vet. J. 90.* 11.]

The mode of infection of dogs with *Demodex folliculorum* and the life-history of the organism are still uncertain, but the parasite can be destroyed by simple antiseptic treatment. Nevertheless, cases have frequently appeared intractable after lengthy treatment and recurrence is common in apparently successfully treated cases. These difficulties are probably due to secondary bacterial invaders, principally staphylococci and, to a lesser extent, streptococci. Sulphur dermatitis due to prolonged treatment also aggravates the condition.

The suggested primary treatment for destruction of the parasites is the dressing of one half of the body at a time, following a thorough scrub in a soda bath, by rubbing in "odylen" (Bayer) or sulphur ointment. After two days the other half of the body is similarly treated. The whole process is repeated and, after a final bath, all larvæ and adult parasites should be eradicated.

The secondary infection is most satisfactorily dealt with by use of non-specific protein therapy. "Antibacsyn," a suspension of ox serum euglobulin in carbol saline adsorbed on calcium and magnesium hydroxides, has been highly successful. Three injections, each of 2 c.cs., are given at intervals of three days. There is practically no shock and the most delicate breeds are unharmed. Within 24 hours of the injection the white cell count may be doubled. The treatment is so successful that in ordinary cases a fourth injection is rarely necessary, and diffuse, moist dermatitis as well as the scaly form are usually cleared up in a week. Abscesses respond generally within two weeks. Usually there is no recurrence at a later date.

Various severe cases are quoted which yielded successfully to this treatment, including an apparently hopeless case of a seven-year-old Dachshund bitch whose entire skin was involved in abscess formation. A complete cure was effected within two months, following five injections.

W. L. S.

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[**Pure Cod-liver Oil as a Wound Dressing.** Sparling, P. S. (1934.) *J. Roy. Army Vet. Corps. 6.* 1. p. 40.]

The author describes three accident cases involving severe surface wounds, successfully treated with cod-liver oil. All made uninterrupted recoveries. The treatment is not suitable for punctured wounds, but merits use by regimental dressers for surface wounds, as it neither blisters the skin nor irritates the tissues.

C. V. W.

# Review

[**The Toxicology of Plants in South Africa.** By Douw G. Steyn, D.V.Sc,, (Central News Agency, Ltd., S. Africa, 1934). Price £2 7s. 6d.]

This work constitutes volume xiii of the South African Agricultural Series and follows closely on the publication by J. M. Watt and Breyer-Brandwyk of "The Medicinal and Poisonous Plants of Southern Africa" (Edinburgh, 1932). It is an invaluable treatise on poisonous plants, with special reference to those found in South Africa. In a foreword General Smuts points out that this book represents years of research at the Onderstepoort laboratories and in the field, and expresses the view, which will be shared by those who peruse its pages, that it reflects high credit both on the author and the famous Institution with which he is connected.

The first part of the book is devoted to a discussion of general principles on which the toxicology of plants is based. After a short account of the history of toxicology, the author describes how poisons may be classified, how they are absorbed into the blood stream and how they are eliminated from the body; he then deals with the diagnosis and the general principles of treatment of plant poisoning, the various factors which determine the toxicity of plants and the methods employed for eradicating poisonous plants. The greater part of the volume is concerned with the special toxicology of plants. In the first section of this part poisonous foodstuffs are described, the accounts of the toxicology of Lathyrus and of foods containing cyanogenetic glucosides being especially clear and interesting.

Compared with Great Britain, South Africa is afflicted with a multitude of poisonous plants. Dr. Steyn deals fully with those which have been experimentally proved to be poisonous; in each case he sets forth the active principles which have been separated, the toxicity, the symptoms of poisoning, the *post-mortem* appearances, diagnosis, treatment and prevention. As was to be expected in a work emanating from S. Africa, the account of *Senecio* and its toxic properties is one of the outstanding features of the work. The genus, with 1,250 species, is the largest of the *Compositæ* and yields more alkaloids than all the other genera put together.

The success which has been achieved by investigators of the Onderstepoort school can only be appreciated fully by those who are cognisant of the difficulties which are encountered in this field of research. A plant should only be termed "poisonous" after a convincing experimental proof has been provided; a judgment based only on circumstantial evidence is insufficient. The chemical investigation of plants requires much

# Report

## Report of the Veterinary Director-General, Department of Agriculture, Canada, for the Year ending March 31st, 1934

The Report covers a lot of ground and sets forth the activities of the Health of Animals Branch, the Contagious Diseases Division, the Meat and Canned Foods Division, the Pathological Division, and the Poultry Pathology Laboratory.

Only a few small consignments of cattle, sheep and swine have been imported direct from England since the recognition of the London Quarantine Station, under Article 18 of the Canadian-United Kingdom Trade Agreement, which came into operation on January 18th, 1933. The animals were carefully inspected before unloading and, upon passing this inspection, were promptly transferred to the quarantine station of the Department, and upon the expiration of a 14-day period were released in accordance with the terms of the agreement. It has been possible to accept these consignments owing to the close co-operation of the British Ministry in protecting Canadian interests. Ten consignments of cattle and sheep were imported from Scotland direct, there having been no foot-and-mouth outbreaks in that country. This procedure has been in existence for the past twelve years. Under the new order resulting from the Ottawa Conference, export cattle are not now limited to stores. All classes of cattle may now be exported to Great Britain provided they are isolated for a 24-hour period, are tagged for identification purposes, inspected by a veterinary officer prior to loading, and are accompanied by his certificate of freedom from disease and exposure to infection. Every care is exercised to eliminate any animals that show any signs of disease, or that are not in a fit condition to withstand the hardships of the journey. An order prohibits the export overseas of cattle for breeding purposes and milk production, six months old and over, which have not passed a satisfactory test for tuberculosis within a period of 60 days immediately preceding embarkation.

No extensive outbreaks of scheduled diseases occurred during the period under review, but an outbreak of hog cholera in Western Ontario, and one of glanders in the Eastern Townships of Quebec, gave some concern. The hog cholera outbreak was controlled by the slaughter policy, and serum treating all hogs in the surrounding territory. The source of the glanders was not definitely determined, but it necessitated the submission of 1,170 horses to the mallein test, and there is good evidence that the outbreak was brought under satisfactory control. The outbreaks of rabies which were reported in the previous fiscal period from Quebec and Ontario, were brought under control and the infection eradicated. No further outbreaks occurred, nor has the disease been detected in any other province. Little trouble was experienced in regard to horse mange, and two outbreaks of cattle mange, one in Manitoba, and one in Ontario, were quickly controlled. No outbreaks of sheep scab have occurred for the past six years. Canada has been free for 14 years from the serious disease of breeding horses known as dourine. Two outoutbreaks of anthrax were recorded amongst animals in Ontario, one in the vicinity of a tannery importing foreign hides and the other in a previously infected farm. Fortunately the disease has not at any time been prevalent in the Dominion. Experimental work in regard to bovine hæmaturia continues. There has been a greater demand for assistance under the provisions of the Bang's disease control policy, many purchasers of dairy animals buying them subject to the blood test, and because it is becoming increasingly difficult to export cattle that have not passed a recent test.

There has been much activity in control work with bovine tuberculosis. It has been found that much greater progress was being made in the control of the disease at a smaller cost, under the restricted area plan than under the provisions of the Municipal Tuberculosis Order, and the question of eliminating the Order from the policies of the Department was considered on several occasions, but it was not until the last fiscal period that it was definitely decided to do so. There is now approximately one-quarter of the total cattle population of the Dominion still under supervision for the control of this disease, and with the slaughter of reacting cattle since the inception of the Department's control policies, the incidence of this infection in Canada has been materially reduced. In a ten years period bovine infection has been reduced from 4·71 per cent. to 1·81 per cent.

While Johne's disease has been recognised in the Dominion, it is believed to be of rare occurrence, but, with greater facilities for the transportation of cattle it will undoubtedly spread unless it is promptly detected and suitable measures are taken to protect healthy cattle.

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patience and skill and the results obtained after the expenditure of much time and labour are frequently of little value to toxicology. Chemical literature of the past ten years indicates that this branch of biochemistry is engaging the attention of many organic chemists in Great Britain and on the continent.

Dr. Steyn is to be warmly congratulated on the publication of his treatise and there can be little doubt that a continuation of the work in South Africa will result in further valuable contributions to our knowledge of poisonous plants.

Owing to the peculiarities of the germs producing this disease, much difficulty has been experienced in culturing them, and consequently the supply of johnin is limited. Investigational studies of the disease have been in progress for several years at the Animal Diseases Research Institute at Hull. Johnin has been prepared and is available for diagnostic purposes. An order was passed in March last restricting the importation of birds of the parrot type in consequence of the serious disease of parrots known as psittacosis, transmissible to human beings.

### The Pathological Division

The Pathological Division has been actively engaged in various research and investigational problems, in the manufacture of biological products, and general laboratory services. An extensive tuberculosis control programme has not only brought special problems, but it has increased the output of tuberculin, in its various concentrations, at the Animal Diseases Research Institute to very large proportions. The maintenance of an adequate supply of reliable potent tuberculin has in recent years been an undertaking of much importance. In this connection Drs. E. A. Watson, L. M. Heath and J. C. Reid have been studying the bio-chemistry of tuberculin and the preparation of a synthetic tuberculin on the formula devised by (1) Sauton, (2) Dorset, and (3) Long. Tests have been made with this special tuberculin, and it has been reported on very favourably. Prophylactic vaccination by B.C.G. vaccine has been the subject of critical enquiry for some years, but the results in the aggregate have not borne out the hopes that B.C.G. vaccination would prove to be an efficient means of preventing tuberculosis in cattle which are exposed to natural infection during cohabitation with tuberculous animals. The report concludes that it cannot, therefore, be assumed that this method of vaccination could be widely and effectively utilized for combating tuberculosis infection and disease under ordinary farm conditions. In restricted areas all cattle were tested with tuberculin, the reactors slaughtered under supervision and compensation paid. The number tested and retested in these areas amounted to 401,141 of which 6,615 were reactors and were slaughtered at a compensation cost of $140,000.

Research studies in regard to distemper of the fox and other fur-bearing animals have continued, and immunisation experiments have been carried out with dogs, foxes, and ferrets.

Bang's disease (bovine infectious abortion) is receiving attention from several viewpoints. Assistance is offered to stock owners in controlling this disease by conducting blood tests of their cattle in order that infected animals may be segregated or slaughtered as the circumstances warrant. An increasing number of owners are taking advantage of this assistance, and there are now 516 herds under supervision. Attempts are being made to produce an antiserum against this infection, the results of which are sufficiently encouraging to warrant further effort.

All cattle consigned to Great Britain are now exported under the British Importation of Canadian Cattle Order of 1933. In accordance with this Order, cattle are isolated and held under supervision for 24 hours and inspected from time to time during that period. They are tagged in the right ear with a metal tag bearing the letter C and a serial number. The total number of cattle exported to Great Britain under the above Order during the fiscal year was 56,918.

In the Meat and Canned Foods Division, export trade in pork products has shown a large increase, and this trade can only be held and increased by the production of high quality bacon hogs and concentrated efforts on the part of packers in connection with the curing, grading and transportation of these meats to foreign markets. During the year 1933-34, 14,389 cattle carcases were condemned, which is 1·25 per cent. of the total cattle killed. Swine condemnations amounted to 8,886 carcases or 0·31 per cent. of the total kill. The number of condemnations for tuberculosis in swine amounted to 52·66 per cent. of all carcases.

In the Poultry Pathology Laboratory activities related on the one hand to the study and investigation of certain diseases, and on the other to the diagnosis of diseases with the institution of appropriate control measures. Three communicable diseases appear in the rôles of major importance, *viz.*, intestinal parasitism, laryngotracheitis, and pullorum disease. During the year 14,796 blood samples were submitted to the agglutination test for pullorum disease, employing the standard tube method.

As regards research, as in former years investigational work has been mainly directed against the problem of adult fowl mortality, a matter of great economic importance to the poultry industry.

J. M.

## VETERINARY INSPECTION IN BEDFORDSHIRE

**At a recent meeting of the Agricultural Committee of the Bedfordshire County Council it was agreed to request the committees concerned to prepare and submit, for the approval of the County Council, a scheme for veterinary inspection within the County. This decision was arrived at following the adoption of the report of sub-committees appointed for the purpose of advising what changes are desirable in the existing administrative practice in respect of the veterinary inspection of dairy herds. There was opposition on the part of some members to the joint committee's proposal to appoint a whole-time veterinary inspector to carry out a general periodical inspection of cattle.**

# N.V.M.A. Divisional Reports

## DUMFRIES AND GALLOWAY V.M.A.*

### ANNUAL GENERAL MEETING

The Annual General Meeting of the above Division was held at the Station Hotel, Dumfries, on December 13th, 1934, when the following members were present:—Messrs. J. Allan, G. D. W. Davidson, A. J. Kennedy, A. J. Milligan, R. Simpson, A. P. Steele, O. Stinson (President), A. Young and G. A. Sangster (Honorary Secretary). Professor Boddie and Messrs. A. Gibb, J. A. McKinnon and L. Sahai were present as visitors.

Apologies for absence were received from Dr. Dryerre, Mr. A. Edgar, Dr. Greig, Messrs. W. T. Hewetson, W. K. Mackenzie, P. McKinley, R. Craig, W. G. Robinson, J. Waddell, W. Watt and W. J. Young.

At the request of the President the members stood in tribute to the memory of the late Mr. James Lindsay.

The minutes were taken as read, as published in *The Veterinary Record.*

*Election of New Member.*—Mr. A. P. Steele, Dumfries, proposed by the President and seconded by Mr. A. J. Kennedy, was elected a member of the Division.

*Nomination of New Member.*—Mr. Alexander Gibson, Castle Douglas, was nominated as a member by Mr. Davidson, seconded by Mr. J. Allan.

*Financial Statement.*—The Honorary Treasurer submitted a statement on the financial position of the Division for 1933-34 and, on the motion of the President, seconded by Mr. G. A. Sangster, it was agreed unanimously that the total sum accumulated in the Special Fund for the year 1933-34 be paid to the Division's representative on the Councils of the R.C.V.S. and N.V.M.A.

#### Election of Office Bearers

The following were elected as officers for the ensuing year:—

*President.*—On the motion of Mr. Milligan, seconded by Mr. R. Simpson, Mr. G. D. W. Davidson, Castle Douglas, was elected.

*Vice-President.*—On the motion of Mr. G. A. Sangster, seconded by Mr. A. J. Milligan, Mr. O. Stinson, Appleby, was elected.

*Secretary and Treasurer.*—Mr. G. A. Sangster, Dumfries, was re-elected Honorary Secretary and Treasurer.

*Auditors.*—Messrs. A. J. Kennedy and A. Young were elected.

* Received for publication, January 26th, 1935.

## VETERINARY MEDICAL ASSOCIATION OF IRELAND*

### MEETING AT THE RESEARCH LABORATORY, THORNDALE

A General Meeting of the Veterinary Medical Association of Ireland was held at the Research Laboratory, Thorndale, Drumcondra, Co. Dublin, on August 7th, 1934, at 3 p.m.

The following members were present: Messrs. F. J. Daly (President), L. M. Magee, J. S. MacCann, Wm. Nyhan, S. R. J. Cussen, A. F. O'Dea, J. D. Whitty, P. J. Gaffney, R. P. Byrne, M. J. MacClancy, P. A. Carroll, J. P. Nowlan, J. F. Timoney, P. E. Mullaney, C. M. Griffin, S. Conway, R. J. Nolan, M. J. Ryan (Abbeyleix), T. Fitzpatrick, Wm. Reidy, J. J. Dundon, J. J. Lyons, James Dodd, P. Crowley, M. T. G. Byrne, Sean O'Donovan, J. W. Kenny, D. O'Connor, J. M. Murphy, J. M. Crowe, P. F. Dolan, J. Colleran, Mrs. K. M. Lowndes, Professor W. Kearney and Professor J. J. O'Connor (Hon. Secretary).

The minutes of the previous meeting, having been circulated, were taken as read and signed.

#### Correspondence

Correspondence comprised communications from:—

1. Messrs. J. W. Nolans, F. W. Taylor, T. A. Mernagh, F. S. Ringwood, T. R. Mulcahy, P. V. Carroll, Professor J. F. Craig and Professor T. G. Browne, apologising for absence from the meeting and wishing it success.

2. W. O'Callaghan, regretting inability to attend the meeting and enclosing a statement of his views regarding the "cause of the failure

* Received for publication, January 17th, 1935.

Correspondence.—Correspondence from the Treasurer of the Victoria Veterinary Benevolent Fund was read and it was agreed, on the motion of Mr. A. J. Milligan, seconded by Mr. J. Allan, to send a subscription of £2 2s. It was also decided, on the motion of Mr. A. P. Steele, seconded by Mr. A. J. Milligan, to circulate to all the members of the Division not present at the meeting, an extract from the letter from the Secretary and Treasurer, pointing out the very low financial state of the Fund.

*Next Meeting.*—It was arranged to have the next meeting at Carlisle during the month of February.

*Paper.*—After lunch a paper on "The Interpretation of Urine Analysis in Diagnosis" was read by Professor Geo. F. Boddie and was followed by a discussion. [Professor Boddie's paper is reproduced at the commencement of this issue.—*Editor.*]

George A. Sangster, *Hon. Secretary.*

of Veterinary State Services in the Irish Free State, the grievances of Veterinary Inspectors and the remedy."

Mr. O'Callaghan dealt with the subject under the following headings:—

(i) *Scattered over a number of Independent Bureaux*—

Owing to there being no existing appropriate bureau there is much overlapping in Veterinary Services and futile distinctions are made in dealing with the same disease.

In Bureau No. 1 orders are drafted by experts so that, when interpreted, the objects of the orders will be attained. Bureau No. 2 receives the orders and, being composed of laymen in County Councils, its practice is to have the orders dealt with as economically as possible. They generally regard the onus of the orders as trivial and fix £20 or so as remuneration for carrying them out. Bureau No. 3 is the office of the County Medical Officer of Health, who is fully conscious of the importance and objects of the orders and whose duty it is to see that the work is done. Although aware of their liabilities beforehand, veterinary surgeons accept appointments at the inadequate remuneration referred to above. An occasional local authority grants £140 or so for similar work.

(ii) *Multiple Appointments*—

Some officers hold several appointments with a gross income which is fairly considerable, but with an amount of work which they can never do efficiently. Others have but few appointments, grossly underpaid, and some none at all. Actually there is work of great importance for all and adequate remuneration to be obtained. The results are that our service is largely nullified. We all have grievances: underpaid, overworked to no purpose, our field is like a commonage where ploughman, planter, reaper and rancher labour uncontrolled, without .co-ordination; there is plenty of work, but no return.

(iii) *The Remedy*—

Co-ordination of State Services under an independent Bureau, which will ensure efficiency —the only possible way of securing it, also that the Inspectors' labours will be understood—well-paid offices for all, and which, finally, will be practical and is, in any event, inevitable.

We can secure this, if necessary, by general non-co-operation of Inspectors only. Our solidarity will be assured by the serious nature of our grievances and consciousness of their growing intensity, cases of individual irregularity being amenable to continued non-co-operation for that purpose alone. It is inevitable because of the fruitless nature of the present system and the growing volume of grievances. The establishment of such an independent bureau will not be elaborate or too costly.

It is our duty as a profession to tender our expert advice to a Ministry which has taken such a lively interest in clean meat and milk supplies; to indicate clearly what are the fundamental factors which presently mar and defeat their purpose, and, moreover, to point the way. Surely it is a work worthy of the Association.

3. A. Donnelly, Drogheda: regretting his inability to attend the meeting owing to being engaged at the Horse Show, and also missing the opportunity of listening to what must be a most interesting paper, as well as the address to be given on the occasion by the Director. Mr. Donnelly said that he felt confident that the members present would avail themselves of the opportunity of conveying, through Mr. Norris, their sincere good wishes to his daughter and her husband on their recent marriage, and would desire to join in the expression of felicitation.

The President said he was sure they were all anxious to offer their congratulations to Miss Norris and her husband on their marriage. He, on his own behalf, and on behalf of the Association, wished the happy pair long life and happiness and he would ask Mr. Norris to convey to his daughter and her consort their heartiest congratulations.

Mr. Norris thanked the President and members for their kind congratulations, and said his daughter and her husband would be delighted on receiving the message from him.

4. The Secretary of the Minister of Local Government and Public Health.—Further to his letter of May 11th, 1934, the Secretary of the Minister stated that the latter desired him to point out that the remarks of the Minister with regard to the scarcity of veterinary surgeons were influenced by the fact that when vacancies on the staff of the Department of Agriculture were advertised in 1932, with improved conditions, the response to the advertisement was so poor that the Commission were able to recommend only one qualified person for appointment. Previous effort to fill the vacancies had also proved fruitless and in consequence these vacancies had remained unfilled for some years.

It was decided to refer this letter to the Council, to formulate a reply to the Minister.

5. Letter from Mr. Donnelly, which was read at the Limerick meeting.

The Hon. Secretary said he thought it advisable to read the letter at this meeting.

Arising out of this communication, Mr. Dolan said he was not consulted in the drawing up of the provisions of the Milk Bill and that there was not much relation between this Bill and the recommendations of the Commission of which he was a member.

Mr. Dundon observed that he was speaking to some members of the Dail who said it was a disgrace that no veterinary surgeon was consulted in the framing of this Bill. He was also speaking to Mr. McCarron on the matter; Mr. McCarron became very interested and promised to receive a deputation from the Veterinary Medical Association of Ireland in regard to it.

### Address by Mr. J. H. Norris

The meeting was now addressed by the Director of the Laboratory, Mr. J. H. Norris, C.V.O., M.R.C.V.S., who extended a hearty welcome to members of the Association, and stated that he was glad to have the opportunity of meeting them and explaining, in the short time

available, some of the work carried out by the veterinary staff in the laboratory.

The work might conveniently be divided into (*a*) Diagnosis and Advisory work; (*b*) the preparation of vaccines, and (*c*) Research work. The Laboratory dealt with 5,000 specimens for diagnosis annually, about 4,000 of which were connected with the scheduled contagious diseases, such as tuberculosis, swine fever, sheep scab, anthrax and rabies, the remainder being specimens received from veterinary practitioners for the diagnosis of contagious abortion and other animal diseases. Under the Bovine Tuberculosis Order, 1926, it was necessary to forward to the Laboratory specimens from each animal slaughtered under the Order. This procedure was chiefly to control the working of the Order and also to gain information as to the types and incidence of the disease in the various districts. It was not intended to supersede in any way the judgment of the local Veterinary Inspector, who was primarily responsible for diagnosis and *post-mortem* findings under the Order. If it was found that an Inspector was working on wrong lines he was interviewed in the matter, usually with satisfactory results.

An analysis of the results of examination of 15,000 *post-mortem* specimens from animals slaughtered under the Order revealed miliary lesions in 1·58 per cent. and tuberculous mastitis in 2·65 per cent. The great majority, however, showed caseous and grape lesions. Other lesions met with were those of purulent bronchopneumonia, acute pneumonia, cirrhosis of liver, parasitic cysts, malignant growths, pyogenic mastitis, parasitic bronchitis, etc. No case of Johne's disease had been discovered. Carcinoma accounted for 50 per cent. of the new growths, the commonest seats being the lung and the liver.

Bulk samples of milk from a large number of herds supplying creameries had been tested for tuberculosis and an endeavour made to trace the tuberculous cow or cows responsible for each positive sample. Samples of separated milk from creameries were also tested for tuberculosis. About 300 specimens under the Swine Fever Order and 800 agglutination tests for contagious abortion were dealt with annually.

Over 20,000 doses of vaccine were prepared and issued annually to practitioners in the Free State at the following charges: anti-abortion vaccine, 1s. per dose; braxy vaccine, 1d. per dose, and blackquarter vaccine 3d. per dose.

The Laboratory staff had engaged in research in liver fluke disease, contagious abortion and sterility in cattle, swine fever, braxy, blackquarter, tuberculosis, and some minor problems, and papers had been published on some of the completed work. Work on a limited scale was at present being carried out in connection with vaccination against Bang's disease, sterility in cattle, types of tuberculosis in swine, and louping-ill in sheep.

### Discussion

Mr. Dundon thanked Mr. Norris for his most interesting address, adding that he inoculated guinea-pigs from samples of separated milk, mostly from Munster, taken by Creamery Inspectors, and that many of them died from mixed infection.

Professor Kearney said that his experience bore out the figures of Mr. Norris. Greater facilities should be given to that institution for the work of research. The work done by Mr. Norris and his able assistants was more than one would expect were it not for the interest they took in it. The work was in the best possible hands and the amount that was done by such a small staff was surprising. Additional financial assistance should be asked for to carry out further research. He complimented Mr. Norris upon his clear and interesting address.

Mr. Cussen asked what was being done with the Spahlinger vaccine.

Mr. Norris replied he could never get definite information about it, but work was being done in Northern Ireland in connection with it. He did not believe that the Spahlinger product was any better than the B.C.G. vaccine. He thanked the meeting for the way they had received his address.

*Paper.*—Mr. J. F. Timoney, M.R.C.V.S., presented a paper entitled "Bovine Sterility and its connection with Contagious Abortion." [Mr. Timoney's paper will be published at a later date.]

The paper was listened to with great interest and gave rise to a long and instructive discussion in which the following members took part: Mr. F. J. Daly (President), Professor W. Kearney, Messrs. Wm. Nyhan, L. Magee, J. S. MacCann, J. M. Crowe, S. O'Donovan, P. F. Dolan, P. J. Hammond, S. R. J. Cussen.

All the speakers complimented Mr. Timoney on the excellence of his paper, which dealt with a very important subject in a practical and original manner.

Mr. Timoney thanked the speakers for their complimentary remarks and answered the various questions that were put to him on the subject of his paper.

Votes of thanks to both Mr. Norris and Mr. Timoney were passed with acclamation.

### Report of Council

The Honorary Secretary read the following report of Council, which was unanimously adopted:—

**Three meetings of Council were held since the date of the last report on January 30th, 1934: one on February 23rd, one on March 26th and one on May 7th, 1934.**

The following business was transacted:—

A programme for the ordinary general meetings for 1934 was provisionally drawn up as follows:—

*The May Meeting.*—Practical Demonstrations to be given by members of the following panel, *viz.*, Messrs. F. J. Daly, L. M. Magee, H. O'Leary, P. F. Dolan, Professor J. F. Craig and Professor T. G. Browne.

*Provincial Meeting.*—To be held in Limerick City. Mr. Patrick Harnett, M.R.C.V.S., to read a paper on "Milk Hygiene." Mr. Dundon, C.V.O., of Limerick City to co-operate in the arrangements for the meeting.

*August Meeting.*—Mr. J. H. Norris to be asked to arrange for demonstrations at Thorndale Research Laboratory and for one of the Research Officers of the Laboratory to read a paper.

*November Meeting.*—Mr. F. O'Leary to read a paper on "Accidents and Diseases of Greyhounds."

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*Slaughter of Animals Bill,* 1933.—This Bill, which is a private measure introduced into the Senate, was considered by the Council. Mr. P. F. Dolan made arrangements for the passing of two amendments to the Bill which safeguarded the interests of veterinary surgeons under the sections concerned. The question as to whether part-time veterinary surgeons will be prepared to carry out the duties under Section 5 of the Bill without extra remuneration was considered and it was decided to await the views on this point of the veterinary surgeons concerned.

*Fees for Veterinary Surgeons Officiating at Greyhound Racing Tracks.*—A letter was issued to the Secretary of the Irish Coursing Club and to the Managers of the greyhound racing tracks in the country and city stating that it was the opinion of the Council that the fee of at least two guineas per night should be paid to officiating veterinary surgeons.

Replies were received from: (1) The Secretary of the Irish Coursing Club, Clonmel, stating that the question of the veterinary surgeon's fee was left for arrangement between the Greyhound Racing Track Management and the veterinary surgeon concerned and that the appointment of a veterinary surgeon was not insisted upon in the case of the smaller tracks; (2) The Manager of the Harolds Cross Greyhound Racing Track, Co., saying that owing to the prevailing depression they could not see their way to increase the fee which their officiating veterinary surgeon is at present receiving.

*Local Services (Temporary Economies) (No. 2) Bill,* 1934.—The remarks made by the Minister for Local Government on the debate on this Bill to the effect that veterinary surgeons were in a position to dictate terms, were considered and a sub-committee was appointed to draft a letter to the Minister refuting his remarks. This letter was drafted and, after amendment by the Council, was issued to the Minister who replied stating he had received the letter and that he would communicate further at a later date.

*Eradication of Bovine Tuberculosis.*—The revival of the report passed at the Annual General Meeting in January, 1931, on the subject of the "Eradication of Bovine Tuberculosis," was suggested.

*Letter of Congratulation to Secretary, Department of Agriculture.*—It was decided to send a letter of congratulation to Mr. D. Twomey on his appointment as Secretary of the Department of Agriculture, having regard to the fact that he is well versed in the live-stock problems of the country.

This letter was duly sent and an acknowledgment received from Mr. Twomey thanking the Association for their good wishes.

*Appeal.*—An appeal on behalf of a distressed veterinary surgeon was issued to all members of the profession in the Free State and 67 subscriptions were received amounting in all to £42. This amount has been handed over to the member concerned and it is hoped will be sufficient to tide him over his difficulties.

*Commission to Consider the Reorganisation of the Veterinary Services.*—The Honorary Secretary said that a resolution on this matter was passed at the provincial meeting in Limerick and it was of such importance that he thought it should be brought to the notice of that meeting before being dealt with by the Council as agreed upon at the Limerick meeting.

The decision of the Limerick meeting to have the matter dealt with by the Council was confirmed.

Resolutions.—(1) It was proposed by Mr. Dolan and seconded by Mr. O'Donovan that a vote of sympathy be sent to Mr. Sean T. O'Kelly, Minister for Local Government and Public Health, on the death of his wife. This was passed, all members standing.

(2) It was proposed by Mr. O'Donovan, seconded by Mr. Crowe and passed unanimously, that the work of Mr. Norris and his staff on research in contagious abortion, sterility in cattle, and tuberculosis, being of vital importance to the welfare of the livestock industry of the country, be continued and developed.

*The Milk Bill.*—This was discussed and it was decided to leave further consideration of the Bill to the Council with a view to making arrangements for a deputation to Mr. McCarron, as referred to by Mr. Dundon.

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In the interval between Mr. Norris's address and Mr. Timoney's paper, the members present were entertained to tea by Mr. Norris, whose hospitality was greatly appreciated by all.

Excellent arrangements had been made for the meeting by Mr. Norris and his staff, and many beautiful pathological specimens were exhibited and examined with great interest.

J. J. O'Connor, *Hon. Secretary.*

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## NORTH WALES V.M.A.*

### ANNUAL MEETING AT RHYL

The Annual Meeting of the North Wales Division was held at the Imperial Hotel, Rhyl, on Friday, November 16th, 1934, at 2.30 p.m.

The President, Mr. R. L. Lewis, occupied the chair and there were also present Messrs. Booth, Burrows, Cartwright, T. W. Hughes, H. Llewelyn Jones, W. O. Jones, Professor Share-Jones, Messrs. Wynne and H. V. Hughes (Hon. Secretary).

* Received for publication, January 23rd, 1935.

Apologies for absence were read from Messrs. Cane, W. Hughes, Dr. Montgomerie, Messrs. Roberts, W. T. Rowlands and Savage.

The minutes of the meetings held on July 27th and August 25th were taken as read and were confirmed. In this connection the Secretary announced that a new minute book had become necessary and that the President on hearing of the need had very kindly presented one to the Society which he had had suitably inscribed. He wished, on behalf of the members, to thank Mr. Lewis for his gift. (Applause.)

Arising out of the minutes was the matter of the R.C.V.S. Library Appeal, consideration of which had been deferred from the last meeting. It was agreed to subscribe £5 5s. towards the fund.

The Secretary read acknowledgments of the resolutions passed at the last meeting from the Ministry of Agriculture and the N.V.M.A. A discussion arose on the recommendations of the report of the Cattle Diseases Committee of the Economic Advisory Council and it was unanimously agreed " That having regard to the far-reaching effects of the recommendations contained in the report of the Cattle Diseases Committee of the Economic Advisory Council, the North Wales Division urges the N.V.M.A. Council to take the action necessary to secure the publication of the minutes of evidence submitted to the committee, in order that the profession and the public may be in a position to judge how far the conclusions and recommendations are in agreement with the evidence submitted."

*Correspondence.*—(1) From Mr. T. W. Woodhead, tendering his resignation on removing from the district. It was agreed that Mr. Woodhead's resignation be accepted with regret.

(2) From the South Wales Division, containing the suggestion that the North and South Wales Divisions should co-operate with a view to forming a Welsh Branch of the N.V.M.A. It was agreed that the Secretary inform the South Wales Division that the North Wales Division would be prepared to join that Division in making application to the N.V.M.A. for the recognition of a Welsh Branch of the Association.

*Election to Membership.*—Mr. W. Jones Parry, Penygross, having been nominated at the last meeting, by Mr. Llewelyn Jones, seconded by Mr. Booth, was unanimously elected a Fellow of the Society.

*Nomination.*—Mr. O. Lloyd Williams, Llangefni, was nominated for election by Mr. Llewelyn Jones, seconded by the Hon. Secretary.

*Financial Statement.*—The Hon. Treasurer was then called upon to present his financial statement. Mr. Cartwright's report showed a substantial credit balance, and he was congratulated on the satisfactory state of the Society's finances.

### Election of Officers

The President, announcing the next item on the agenda—the election of officers—said he wished to take that opportunity of thanking the members for their unstinted support of the chair during the last two years whilst he had had the honour of presiding over their affairs. He had enjoyed his period of office, and had been impressed by the spirit of *cameraderie* which existed amongst the members of the profession in North Wales. He expressed his gratitude to his fellow officers for their assistance to him and the hope that his successor would enjoy a very successful year of office.

At this point Mr. W. O. Jones rose to propose the re-election of the President and he was seconded by Mr. T. W. Hughes. Mr. Lewis thanked the members for their proposition which, however, he felt bound to decline. He therefore intended to exercise what he regarded as his prerogative as President, and he proposed that Mr. Llewelyn Jones be elected President. Mr. Jones, he said, needed no introduction to them and he was confident that their affairs could be in no more capable hands. Mr. Burrows supported the proposition, which was carried amid applause. Mr. Llewelyn Jones thanked the members for their expression of confidence in him, in view of which he could not do otherwise than accept the honour.

Mr. Lewis and Mr. Burrow were elected *Vice-Presidents* and Mr. Cartwright was re-elected *Hon. Treasurer.* Mr. H. V. Hughes expressed a desire to be relieved of his duties as *Hon. Secretary.* He had, he said, been in that office for a number of years and he felt it was time some new blood was instilled into the office. Mr. Llewelyn Jones appealed to Mr. Hughes to continue to act as Secretary, and on giving his assent, Mr. Hughes was re-elected.

Mr. W. Hughes and Mr. W. O. Jones were elected *members of the Council,* and Mr. W. O. Jones was also appointed *Auditor* with Mr. W. H. Savage.

*Resolution.*—The following resolution was carried: " That in order to secure as representative an attendance as possible at all meetings of the N.V.M.A. Council, the North Wales Division urge that the railway travelling expenses of divisional representatives to and from Council meetings, other than that held during the Congress week, be defrayed by the N.V.M.A."

It was also agreed that the travelling expenses of the Hon. Secretary to meetings of the N.V.M.A. Council be paid by the Division until such time as the N.V.M.A. is prepared to defray them.

### Address by Dr. Share-Jones

The President, turning to the next item, said he was glad to see Professor Share-Jones had been able to attend that afternoon, and he hoped there would be a good discussion on his Presidential address to the Veterinary Hygiene Section of the Royal Sanitary Institute Congress at Bristol. He thought that perhaps Professor Share-Jones would like to elaborate some of the points in his address on "The Domestic Animals in Relation to our Food and Industries," and he invited him to say a few words at the outset of the discussion.

Professor Share-Jones said: I am glad of an opportunity of amplifying some of the remarks made in my address at Bristol. I may say at the outset that my reason for choosing the subject I did was based on a firm conviction that veterinary science has a mission which is broader than the mere treatment of disease. This conviction was forced upon me at the International Veterinary Congress in London when there was a definite division of veterinarians into two groups—those associated with the diseases of animals, and those interested in Zootechny and Animal Husbandry.

It does not appear to be realised in this country that the veterinarian should be the adviser in all matters appertaining to the domestic animal—alive or dead, well or ill. It is mistake to narrow our sphere of usefulness. It would appear, however, that agriculture on the one hand, and medicine on the other are encroaching upon veterinary science, with the result that its rightful activities are being hampered. There is no profession whose training is as suited to the care animals as is our own. The veterinary student pursues courses in the anatomy and physiology of the domestic animals, which subjects are the basic studies for the industry and which, in my opinion—and I have examined for degrees in medicine, science and agriculture—are far more comprehensive than those taken by any other student. But the public requires to be informed as to our training in such subjects as these, and that is why I gave my address in this form.

I attended the Congress as a representative of a public body, and I was impressed by the numbers attending our gathering. I regret that the proportion of veterinary surgeons was small, and I was more sorry to see some of the younger members of our profession adopt the old method of attacking the sanitary officers instead of discussing the matters with medical officers, who are their responsible chiefs. This places our science on the wrong plane.

The success of agriculture must, of course, depend upon the success of the animal industry, and I was astounded when I heard members of our profession comparing products of the industry in this country and abroad to the detriment of the British animal industry. One gentleman said that "given a choice, as a domestic supply, between imported meat and meat killed in many localities in England or Wales, there could be no hesitation in choosing the former." The inference, I take it, is that the quality of imported meat is better than the home product that is actually sold to the consumer. Now as one who has had an interest in the meat trade for many years apart from a professional connection, I can say without fear of contradiction that the quality of meat produced and consumed in this country is better than that which we import and consume. Moreover, I maintain that the level of quality in rural areas is generally higher than that in the large towns. The colonies are conducting an intensive advertising compaign which has even spread to our professional press, in which I read only the other week that New Zealand lamb was the best in the world. I remember the time when one would pay 6d. to 8d. per lb. more for home-killed lamb than for the imported variety. Now, however, the home trade is diminishing, and prices are not very different.

We are told that we must modernise our plant and our methods of distribution, and that we must have centralisation. This latter proposal is not new. In 1928 the institution of a huge depôt centralising the industry in Gloucestershire was proposed. I wrote to *The Times* on the subject, condemning it, and nothing further was heard of the matter at the time. But the proposed scheme now is that there shall be about seven centres in the largest towns, and a stereotyped abattoir system is to be set up which will do away with the rural abattoirs and their associated industries. All this is inimicable to the animal industry and to the veterinary profession. It would benefit a few members of our profession, place and keep them in big sheltered positions, but it would be a calamity to the general workers in veterinary science, and a still greater disaster to the consuming public which the system would place at the mercy of big trusts. Our social fabric, which has taken centuries to evolve, demands that we should retain our small rural towns, whose interests, of course, depend upon the success of the animal industry. I believe centralisation, which might suit America or Australia, would be wrong in this country. Far better would it be to encourage a revival of our rural industries that have decayed, and in many cases disappeared. This is the most modern view of many intimately associated with the problem and it is a view that is gaining support rapidly. One step in the direction of revival would be the institution of a national system of livestock insurance which I have urged for so long. The greatest merit of this would be that it would bring into being an organisation that would take charge of the whole animal industry

and that it would place veterinary science in its true perspective in relation to the animal population, just as national insurance has done with human medical science. When this comes—as I believe it will come—then it is for us to be prepared to take our part in the development of this great national asset. (Applause.)

### Discussion

The President said that he felt they were all greatly indebted to Professor Share-Jones for giving them an opportunity of discussing the points raised in his address and also for his inspiring remarks that afternoon. He was so much in agreement with all that he (Professor Share-Jones) had said, that he found himself unable to offer any serious criticism. He complimented Professor Share-Jones on putting the case for the utilisation of our by-products so strikingly. With regard to foreign imports, he thought the foreigner was certainly keener in the matter of inspection of his imports than his exports. This had been brought home to him when he had acted as veterinarian to a large bacon curing establishment. He recalled how every contract for abroad required that the consignment should be accompanied by a veterinary surgeon's certificate—not that of a medical officer or a sanitary inspector. It was obvious that foreign countries were very alert in the matter of endeavouring to supply Britain with the products of the animal industry and it behoved them, as Professor Share-Jones had pointed out, to encourage the industry in their own country. He would like to hear the views of the meeting on the subject.

Mr. Burrows, who followed, said he thought Professor Share-Jones had given them a very stimulating account of the possibilities of their animal industry. It seemed to him that one of the first essentials of reform was the securing of a new Public Health Act to supersede that of 1875, under which they were now governed. No mention of a veterinary surgeon was made in that Act, so that a veterinary surgeon could not enter a slaughter-house unless he held an appointment as a sanitary inspector.

He thought that the sanitary inspector should only act as a detention officer, the meat being actually condemned only on the report of the veterinary officer. Every sanitary inspector should have a veterinary surgeon at hand to whom he could appeal in any case of difficulty. It was not possible for him at Birkenhead (where about 60,000 beasts were slaughtered each year), to examine every individual carcase himself, but he had a staff of meat inspectors under his control who knew their work, and they had not yet let him down. They realised the nature of the work required of them, and the trade felt that in the veterinary officer they had one who was there to advise them and who was anxious to deal sympathetically with them.

He thought the Rural District Councils might well consider the advisability of having a corps of veterinary surgeons for purposes of meat inspection; the sanitary officers could then refer to these veterinary officers in any case of doubt. As Professor Share-Jones had pointed out, every veterinary surgeon had had an ample training, in his course for the diploma, to carry out such work efficiently.

Mr. Llewelyn Jones gave some interesting reminiscences of his experiences in Portuguese East Africa, to which country he was appointed as chief veterinary officer 24 years ago. His duties there included the inspection of animals before and after slaughter and he recalled how insistent the Portuguese were, even then, on an efficient system of meat inspection. They were certainly ahead of Britain, for they would not consider meat which had not been inspected by a veterinary officer. He thought there was abundant work awaiting the profession in the directions indicated by Professor Share-Jones in his address, and they should convince the public of their ability to perform it.

*Votes of Thanks.*—Mr. Wynne said he wished to propose a hearty vote of thanks to Professor Share-Jones for his address. He had much enjoyed reading the printed address and also the discussion that afternoon. There was no one more competent to deal with the subject of their relationship, as a profession, to the animal industry than Professor Share-Jones, who had made it his particular study. He agreed that there was important work for the profession to do and he felt that it was only very largely owing to their small numbers that they did not accomplish more.

Mr. W. O. Jones seconded the motion, which was carried with acclamation, Professor Share-Jones making a brief acknowledgment.

The Hon. Secretary then proposed a vote of thanks to Mr. Lewis for his conduct of affairs during the two years he had acted as President. Mr. Lewis, said Mr. Hughes, had previously spoken of the assistance he had received from his colleagues during his tenure of the chair, and he (the Hon. Secretary) wished to assure him, on behalf of the officers, that they had equally enjoyed their association together. As Secretary he had always found Mr. Lewis most keen on the welfare of the Society and always glad to assist him in any matters appertaining to it. (Applause.)

The proposal was carried unanimously and Mr. Lewis, in a brief reply, thanked the members for their expression of appreciation of his efforts. He felt confident that the Division would enjoy a very successful term with Mr. Llewelyn Jones as his successor.

*Next Meeting.*—It was agreed to hold the next meeting at Wrexham.

Howel V. Hughes, *Hon. Secretary.*

## In Parliament

The following questions and answers have been recorded in the House of Commons recently:—

### Public Health: Milk Supplies

Mr. Rhys Davies asked the Minister of Health whether it is proposed to initiate legislation or to issue regulations with a view to securing a cleaner milk supply?

Mr. Shakespeare: Detailed regulations for securing the production and distribution of clean milk are already contained in the Milk and Dairies Order of 1926 and it is not proposed at present to introduce legislation or to issue further regulations for this purpose. The question of the steps to be taken to secure a safer milk supply is under consideration in connection with the recommendations made on this subject in the recent report of the Cattle Diseases Committee of the Economic Advisory Council.

### Experiments on Animals

Mr. Groves asked the Home Secretary how many licences to experiment on animals under the Cruelty to Animals Act, 1876, were granted in 1934 to persons not holding any medical or scientific degrees?

Sir J. Gilmour: 19 licences were granted during 1934 to persons not holding any medical or scientific degrees, but in each case satisfactory evidence was produced that the applicant was qualified to perform the experiments for which the licence was granted.

Mr. Groves asked the Home Secretary how many experiments on animals under the Cruelty to Animals Act, 1876, were performed in 1934 in which permission was given to use curare or curarine?

Sir J. Gilmour: During 1934, 37 experiments involving the use of curare were performed on living animals under permissions given by the Secretary of State. Seven of these experiments were performed on deeply anæsthetised animals; while the remaining 30 experiments consisted of injections only, no cutting operation being involved.

### Rabies (Quarantine Regulations)

Captain Cunningham-Reid asked the Minister of Agriculture how many years have elapsed since the last case of canine rabies in dogs introduced into this country from Europe and from other parts of the world, respectively; and whether he will consider the possibility of a reduction in the present duration of quarantine, either for all dogs or graduated in accordance with the prevalence of rabies in the country of origin?

The Minister of Agriculture (Mr. Elliot): Five years have elapsed since the last case of rabies in dogs imported from Europe, and 4¾ years since the last case in dogs from other parts of the world. In reply to the last part of the question, I am not prepared to reduce the period of six months' quarantine, which experience has shown to be necessary. Since the year 1919, twelve dogs imported from abroad have developed rabies while in quarantine, four of which developed the disease between the fourth and sixth month of detention.

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A petition by the Corporation of Douglas, Isle of Man, for leave to introduce a Bill authorising the Corporation to make bye-laws for the inspection of meat, poultry, game, fish, or other articles of food brought into Douglas for sale, has been rejected by Tynwald.

# Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

## Diary of Events

Feb. 25th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4 p.m.

Feb. 27th.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, at the Society's House, 1, Wimpole Street, W.1, at 5 p.m.

Feb. 27th.—Annual Meeting of the Scottish Metropolitan Division, N.V.M.A. at the Royal (Dick) Veterinary College, Edinburgh, at 2.45 p.m.

Mar. 1st.—Meeting of the Southern Counties Division, N.V.M.A., at Salisbury, 2.30 p.m.

Mar. 8th.—Annual Dinner and Dance, Yorkshire Division, N.V.M.A., Guildford Hotel, Leeds, 7 for 7.30 p.m.

April 1st.—R.C.V.S. Annual Fees due.

April 3rd.—R.C.V.S. Committee Meetings.

April 4th.—R.C.V.S. Committee Meeting.

April 5th.—R.C.V.S. Committee and Council Meetings. Council Meeting 2 p.m.

May 9th.—Last day for nominations for election to R.C.V.S. Council.

May 23rd.—Voting Papers issued R.C.V.S. Council Election.

May 30th.—Last day for return of Voting Papers R.C.V.S. Election.

June 6th.—R.C.V.S. Annual General Meeting, 12 noon; Luncheon, 1.15 p.m.
Annual General Meeting, Victoria Veterinary Benevolent Fund, 12.45 p.m.

June 13th.—D.V.S.M. Examination begins, Edinburgh.

**July 29th—August 2nd: N.V.M.A. Congress at Belfast.**

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### R.C.V.S. COUNCIL ELECTION

Voting papers for the Council Election to take place at the Annual General Meeting on June 6th have already been issued to members of the College practising outside the British Isles. The candidates nominated to date are Dr. O. Charnock Bradley, Mr. J. Holroyd, Major W. H. Kirk, Mr. J. W. McIntosh, Mr. G. P. Male, Dr. A. W. Whitehouse and Colonel T. Dunlop Young (all of whom are already serving as members of Council), together with two new candidates, namely, Mr. L. S. Balls of Brixton, and Mr. G. C. Webster of Lancaster. There are thus nine candidates for eight vacancies. Further nominations may be received up to Thursday, May 9th, and the voting papers for members practising in the British Isles will be issued on May 23rd.

## "ATTESTED HERDS" SCHEME OF THE MINISTRY OF AGRICULTURE

In our issue of January 19th we outlined and commented upon the arrangements made, for England and Wales, by the Minister of Agriculture, under Section 9 of the Milk Act, 1934, to promote the establishment of so-called "Attested Herds," *i.e.*, herds free from tuberculosis. In another part of this issue we now print the full text both of the Ministry's explanatory memorandum on the Scheme—Tuberculosis (Attested Herds) Scheme (England and Wales)—and of the Rules required to be observed in the case of herds in respect of which a Certificate of Attestation has been issued by the Ministry under the Scheme.

With regard to the initial tests provided by the owners of herds, we are informed by the Ministry, that *any* of the recognised tests will be accepted by the Ministry, provided they are carried out by a veterinary surgeon, who will supply the necessary certificates. The Ministry of Agriculture is *not* confining these initial tests to the double intradermal test.

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## COMMITTEE ON CATTLE DISEASES, ECONOMIC ADVISORY COUNCIL

A deputation representing the N.V.M.A. met Mr. H. E. Dale, C.B., Mr. P. J. L. Kelland, Chief Veterinary Officer, and Mr. E. C. Lloyd, at the Ministry of Agriculture, 10, Whitehall Place, S.W.1, on Friday, February 15th. The purpose of the meeting, which Dr. J. M. Hamill, O.B.E., and Mr. J. N. Beckett attended on behalf of the Ministry of Health, was to discuss the Association's proposals in connection with the Report of the Cattle Diseases Committee.

The members of the deputation were the President (Professor J. F. Craig), Mr. H. W. Steele Bodger, Mr. W. Nairn, Mr. G. P. Male, Major D. S. Rabagliati and Dr. W. R. Wooldridge.

Earlier in the day the deputation had a meeting with the Chairman, Vice-Chairman, and General Manager of the Milk Marketing Board at Thames House, Millbank, S.W.1.

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## PERSONAL

*Appointments.*—Members of the N.V.M.A., to which organisation Mr. C. O. Langley is Solicitor, will desire us, on their behalf, to congratulate him warmly on his appointment as Coroner for the County Borough of Wolverhampton.

Mr. H. M. Salusbury, M.R.C.V.S., D.V.H., has been appointed an Assistant Veterinary Officer, West Riding of Yorks. County Council, to take the place of Mr. S. Sharp, M.R.C.V.S., D.V.S.M., who, as reported in our last issue, has accepted the post of Veterinary Officer to the County Borough of Barrow-in-Furness.

Roxburgh County Council have agreed to appoint Mr. J. Forrest, at present County Veterinary Officer for Selkirkshire, as the Veterinary Officer for Roxburghshire under a joint scheme with Selkirk County. Negotiations with regard to the appointment have been proceeding for some time, and were held up owing to the fact that the Selkirkshire authorities made a condition that Mr. Forrest should be appointed in the joint capacity, while the standing orders of Roxburgh County Council made it necessary for such a post to be open for applications. Mr. Forrest was chosen for Roxburghshire from a number of applicants. The appointment takes effect from May 16th.

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*Will.*—Major Joseph Abson, D.S.O., T.D., F.R.C.V.S., of 6, Claremont Place, Sheffield, Chairman of Joseph Tomlinson & Sons, Sheffield, formerly Treasurer of the Royal College of Veterinary Surgeons, who died last November following a motor-car accident in Sheffield, left £35,981, with net personalty £35,539.

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## R.C.V.S. OBITUARY

Cousens, Frederick, W., c/o Kennel Club, 84, Piccadilly, W.1. Graduated London, July 12th, 1900; died February 4th, 1935, at Cromer.

Townsend, John James, 146, Huntingdon Road, Cambridge. "Existing Practitioner." Died February 12th, 1935, aged 81 years.

### The late Mr. J. J. Townsend, M.R.C.V.S.

"Mr. Townsend, who was in his 82nd year, was well-known in the village of Longstanton and in the district, where he had, up to 1919, practised as a veterinary surgeon," says *The Cambridge Independent Press and Chronicle.*

"Born at Longstanton in 1853, he was the son of Mr. and Mrs. H. Townsend. He studied veterinary surgery under his father and succeeded him in his practice on his death. Later, he was assisted by one of his own sons, Major Townsend, but carried on the practice by himself when his son went to the war. He finally retired in 1919, and went to live at Hunstanton, where he resided until six years ago, when he came to live at Glencoyne, Huntingdon Road, and his son continued in his place.

"Up to about a year ago he was in excellent health. About two years ago he made a journey alone to Gibraltar to see his younger son, a major, who was stationed there.

"During the whole of the time he lived at Longstanton he took the greatest interest in all things connected with the parish. He was Chairman of the Parish Council from its formation until he left the village in 1919—a period of 30 years. He also served on the Chesterton District Council for some years. During the war he was Chief Special Constable in the village. His influence and untiring work was chiefly responsible for the restoration to the village of the late Sir Richard Hatton's £100 Charity, which had been lost for nearly 30 years. Thanks to the late Mr. Townsend, the widows and poor of the village now receive a certain amount of free coal every year.

"His favourite sports were cricket and hunting, and up to a few years ago he could be frequently seen in the saddle during the times he stayed with his son. For many years he was captain of the cricket team, and during that period the side won a much-prized trophy, the Papworth Cup.

"He was a great judge and lover of horses, and his advice was frequently sought not only in his own practice, but far beyond its limits. He had acted as judge of Shire horses at various

shows, and was never tired of talking of them to his numerous friends. Perhaps the most responsible position he ever held was that of veterinary adviser to the famous Girton Shire Horse Stud, owned by the late Mr. Fred Crisp, J.P., of whom Mr. Townsend was a personal and almost lifelong friend. The stud was probably the biggest and most famous that has ever existed in England. It is probably unique that the stud at one time had in one field no less than seven Shire mares which had been champions at the London Shire Horse Show. When some of the late Fred Crisp's paintings of these horses were for sale, Mr. Townsend bought them. He numbered them among some of the most treasured of his possessions.

"He leaves two sons and five daughters. The elder son, Major C. W. Townsend, F.R.C.V.S., succeeded him in his practice. The younger, Major C. H. S. Townsend, M.C., O.B.E., F.R.C.V.S., served with distinction in the late war, gaining the M.C., and is now a Major stationed in Northants. All his daughters are married. Mr. Townsend lost his wife in 1930."

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## FINANCE OF ANIMAL DISEASE CONTROL

Grants relating to diseases of animals account for £132,000 of the additional £175,000 required by the Ministry of Agriculture under the Supplementary Estimates issued on Saturday last, but savings totalling £100,515 and an increase of £2,260 in appropriations in aid reduce the net sum required to £73,000.

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The accounts of the Agricultural Research Council for the year ended March 31st, 1934, show that the balance in hand at the beginning of the year was £3,704 3s. 6d., the grant for research was £6,000, and that for administrative expenses £3,030, a total of £12,734 3s. 6d. The grants made for research totalled £3,952 7s., while the administrative expenses amounted to £3,027 3s. An unexpended balance of £6 4s. 1d. for administrative expenses in 1932 had been refunded to the development fund, and a balance of £5,748 9s. 5d. was carried forward.

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## ARMY VETERINARY SERVICE

### Movements of Officers

Major R. A. Gooderidge, O.B.E., and Major C. S. Northcott, who have been on leave *ex* India, reverted to the Home establishment with effect from February 5th. They are now stationed at Shorncliffe and Aldershot, respectively.

Major W. B. Howe was posted from the Eastern Command to Aldershot for duty on February 8th.

Major H. Jerrom sailed for India on February 9th for a tour of duty abroad.

Lieut.-Colonel J. O. Andrews, D.S.O., who has been on leave *ex* India, reverted to the Home establishment on February 16th. He assumed duty as Commandant, Royal Army Veterinary School and School of Farriery, Aldershot, on that date.

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## LADIES' VETERINARY BENEVOLENT GUILD

### Belfast Committee's Successful Effort

The local committee of the Ladies' Veterinary Benevolent Guild gave a successful supper dance in the Carlton Ballroom, Belfast, on February 8th. This committee have decided to hold several social functions prior to the forthcoming Veterinary Medical Association's annual Congress, which is to take place in Belfast, for the first time, during the last week of July and the first week of August. The committee hope in this way considerably to augment the funds of the benevolent Guild.

The guests, who numbered some 200, were received by Mr. A. M'Lean, M.R.C.V.S. (city veterinarian) and Mrs. M'Lean, who is the president of the local Benevolent Guild Committee, consisting, in addition, of Mrs. Magowan (Hon. Secretary), Mrs. M'Allan, Mrs. Kelly, Mrs. Finch, Mrs. Green, Mrs. Rosborough, Mrs. Robinson, Mrs. Lamont, Mrs. Dolan, Mrs. Barkley and Mrs. Cassels.

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## VETERINARY INSPECTION IN DEVONSHIRE

At a recent meeting of the Devonshire Diseases of Animals Sub-Committee the question of appointing a junior veterinary officer was discussed, but it was felt that it would be more economical and equally satisfactory to engage the services of local veterinary surgeons.

In the quarterly report on the existence of disease in the county, it was stated, in regard to tuberculosis in cattle, that 43 animals had been slaughtered during the past quarter.

Commenting on this, the Chairman declared that there had been an increase in the number of cases reported. There was no doubt, however, that there was a number of people, having cases of tuberculosis on their premises, who had sent animals to slaughter without reporting them. The veterinary department expected every case of suspected tuberculosis to be reported.

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## COUNTY COUNCILS' ASSOCIATION AND SALARIES OF VETERINARY OFFICERS

At a meeting of the Executive Council of the County Councils Association held on January 23rd, the report of the Agricultural Committee contained the following references to the (adopted) report of the Advisory Sub-Committee on the subject of the salaries paid to County Veterinary Officers:—

"The Sub-Committee had before them a letter received from the National Veterinary Medical Association of Great Britain and Ireland with regard to the salaries of whole-time county veterinary officers.

"The Secretary reported that, in accordance with the request contained in the letter and on the instructions of the Chairman of the Executive Council, arrangements had been made for a deputation, consisting of Major D. S. Rabagliati and Major B. DeVine, to attend the meeting.

"After hearing statements by the members of the deputation, who outlined the case for higher salaries for whole-time veterinary officers and suggested the desirability of establishing a scale of minimum commencing salaries on a basis commensurate with the responsibilities involved, it was resolved 'That the further consideration of this subject be adjourned until the next meeting, and that the National Veterinary Medical Association be asked to submit for investigation by the Sub-Committee particulars of the salaries now paid to whole-time veterinary officers in various parts of the country.'"

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## AMERICA AND EUROPE: A RESEARCH COMPARISON

"Is it really true that, as in many branches of commerce and industry, America has surpassed ancient Europe also in the field of scientific research?" asked Professor A. Ascoli, Director of the Institute of Comparative Pathology and of the Anti-tuberculosis Vaccine Institute, Milan, in the course of his broadcast address given on the occasion of Twelfth International Veterinary Congress, New York.

"I do not know your views about it, but I would personally find myself seriously embarrassed should I have to answer with a simple 'yes' or 'no.' Just to quote an instance, I may mention that last year at the Volta Congress, to which the Academy of Italy had invited the scientists of all Nations to discuss the most burning problems relating to immunisation, the most striking personality was undoubtedly that of Dr. Landsteiner, American research worker, holder of the Nobel prize and member of your Rockefeller Institute for Medical Research, and even ten years previously this pre-eminence appeared to me firmly established at least in the field of microbiology.. At the time my assistant, Dr. Nai, at the invitation of the same Institute, went to America from whence he returned full of admiration for American science and carrying with him the vision of the wonderful progress achieved by you in this field.

"The question that arises now is whether your undisputed merits are such as to exceed those that old Europe can, in its turn, claim. To try and answer it permit me, as an old biologist, to instance what has occurred in my own particular branch. I have taken up biological work and carried out researches in immunisation since the beginning of the present century, when serums and vaccines for the stamping out of the principal infectious diseases were, let us frankly admit, almost all already discovered by European scientists. It is obvious that America, as a young Nation, could not participate in this triumphal march, which constitutes one of the chief medical achievements of the nineteenth century. Let us further examine what happened later on, at the beginning of this century, when Governments were anxious to direct the activity of medical research workers towards the solution of public health problems such as, for example, the fighting of syphilis: in this field, we, of the old guard, have succeeded in transmitting this disease to monkeys and to discover the serum diagnostic reaction known in Europe as the Wassermann test or better the Wassermann, Bordet, Gengou, Moreschi test; at the same time, at your end, this has been supplemented by the Kahn test, an American modification which is quick and practical, as are all your innovations. I would almost be inclined to affirm that it is the instinctive practical sense of your people that gives you a superiority in the medical and biological field just as it occurred in another sphere, namely, that of electricity through the discoveries of your great Edison. I would be wrong, however, to limit the matter thus, because also from the scientific and theoretical point of view America is leading to-day just where we, in Europe, have lagged behind—in the practical solution of the problem.

"Perhaps there is, however, a field of the studies on immunisation in which America is a little slow in joining the general campaign and this is in the fight against tuberculosis. There exists, as is generally known, a current favouring, side by side with the general hygienic measures, vaccination as a further means to increase the resistance of the organism against tuberculous infection. It is in this field that the experiences drawn from the experiments on cattle smooth the way to the adoption of vaccinal practice for the protection of mankind.

"In any case it will have to be kept in mind, in the hour of triumph, that in the fight against infectious diseases in general and against tuberculosis in particular, it is through the collaboration of the scientists of the whole world that victory can be achieved."

# Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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## AN ORGANISED VETERINARY SERVICE: N.V.M.A. SCHEME

*From the President, N.V.M.A.*

To the Editor of the Veterinary Record

Sir,—I have read with some surprise a letter from Mr. H. L. Torrance, M.R.C.V.S., D.V.S.M., which appeared in the correspondence columns of *The Veterinary Record* of the 16th inst., with reference to the Report of the Special Committee appointed by the N.V.M.A. to consider the Report of the Cattle Diseases Committee of the Economic Advisory Council, and I would be glad if you would allow me to reply to the criticisms made in that letter.

In the first place, I would like to point out that the Special Committee appointed by the "National" was composed of 23 members including six whole-time veterinary officers, four research workers, two neutral members, and eleven veterinary practitioners. Surely the Committee would be rightly regarded as a representative one. After its deliberations this Committee drew up a Report which was agreed to by its members, and it was presented for acceptance by the Council of the Association at its January meeting. At that meeting discussion and criticism were invited and it can be properly claimed that any adverse reference to the Report was confined to details and did not affect the main proposals. The adoption of the Report was carried without any dissension save that which emanated from two Council men who were not present at the meeting. Surely in all fairness the Report as adopted must be regarded as containing an agreed scheme and having the support of the profession as a whole. Otherwise the Council men present at the Council meeting were not doing their duty as representatives of the Divisions of the N.V.M.A.

The surprise which I felt in reading the letter arose from the implication that the members who formulated and adopted the Scheme were not imbued with the same high motives as those with which the writer of the letter claims to be animated.

Mr. Torrance apparently forgets that the proposals of the Hopkins Committee are not confined to the control and eradication of bovine tuberculosis, but aim at the better control of all and the elimination of some of the diseases of dairy cattle, and even the transfer to the new veterinary service of any functions that may be imposed on them in connection with other diseases of livestock and poultry. It is evident to anyone who contemplates such a wide scope of control that various branches of the veterinary

profession must be included if an effective and efficient service with these objects in view is to be provided.

I do not intend to follow Mr. Torrance over every question he raises. For the most part, they refer to details and do not affect the broad issues and principles of the Scheme.

May I also add that, although Mr. Torrance makes much of the evidence on which the Hopkins Report was based, the minutes of evidence have not been published and their publication has been refused.

On the other hand, the views of members of the veterinary profession were sought and obtained before the Special Committee of the N.V.M.A. proceeded to formulate their Report.

Finally, I would suggest that, while destructive criticism is quite easy in connection with any scheme, criticism of a constructive nature, although much more difficult, is far more profitable and helpful.

Yours faithfully,

J. F. Craig.

Veterinary College,
Ballsbridge,
Dublin, S.E.4. *February 19th*, 1935.

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To the Editor of the Veterinary Record

Sir, I read, with great interest, Mr. H. L. Torrance's letter which was published in *The Veterinary Record* of February 16th. I congratulate him on the observations contained therein, and must say that I am in complete agreement with his views.

The Gowland Hopkins Committee, after hearing a great deal of evidence, came to the conclusion that better results would be obtained from the expansion of local veterinary services with central co-ordination than from the establishment of a State Veterinary Service, and I feel sure that this is a correct conclusion. In paragraph 13 of the report of the Special Committee of the N.V.M.A. stress is laid on the benefit to be obtained by knowledge of local conditions and the avoidance of overlapping and it is not easy to reconcile that observation with the demand made for a central State Service.

From the N.V.M.A. report and the discussion which followed it at the quarterly meeting it is obvious that the one ruling thought which has guided the Special Committee to its conclusions has been the permanent inclusion of practitioners in any scheme which may be adopted.

Quite apart from the much-discussed question of the respective merits or otherwise of part-time or whole-time services, it is regrettable that this matter has been approached from such a selfish angle. When all is said and done, the general practitioners are numerically strong enough to ensure a majority for any proposal which they favour within the profession, but to say that the N.V.M.A. scheme has "the support of the profession as a whole" is hardly correct when I feel sure that it certainly has not got the support of those Veterinary Officers at present employed by Counties and Municipalities.

Yours faithfully,

R. C. Locke,
*Veterinary Officer.*

Public Health Department,
Quay Street,
Manchester, 3.
*February 18th*, 1935.

## GREYHOUNDS AND HÆMORRHAGIC ENTERITIS

To the Editor of the Veterinary Record

Sir,—Perusal of the article by Mr. Stevens and of the subsequent letters from Messrs. Wall and Gould leads me to state my experience, which may be of interest to those whose work brings them in contact with greyhounds.

For the last three years I have been resident veterinary surgeon to the largest greyhound kennels in the country. The kennels are built on an estate of 150 acres and are within easy reach of London. The following table shows the movement of greyhounds during the period 1932-34:—

| | 1932 | 1933 | 1934 |
|---|---|---|---|
| Greyhounds In ... ... | 977 | 1,380 | 1,248 |
| Greyhounds Out ... ... | 970 | 1,298 | 1,196 |
| Average Daily Strength... | 446 | 616 | 664 |

On some days in 1934 the strength has reached 750. Greyhounds of all ages from six months to roughly seven years are kennelled on the premises but the majority are between 18 months and four years. Throughout the period under review I have had 13 cases of hæmorrhagic enteritis (six in 1932, six in 1933, and one in 1934). All of these occurred sporadically and I have never met the condition described by Mr. Stevens; in fact, I am tempted to ask if it is the same condition as the sporadic type. What are Mr. Stevens' reasons, I wonder, for calling it contagious? Does it not seem rather that the origin was the same and that the animals were possibly suffering from a poison or toxin of extraneous origin? My experience of greyhounds leads me to believe that when a contagious disease breaks out in a kennel and dead or dying dogs are the first clue, then the disease is well-established on the premises and owing to the intermixing of men and dogs, at least 100 out of 150 will be attacked, if not indeed the whole kennel.

Owing to my limited experience of hæmorrhagic enteritis there is little I can say with regard to treatment. The dog that has been several hours ill and is found *in extremis* in the morning offers little scope. I have used Dr. McCunn's formalin treatment with success and I have lost a case or two with it—probably because I used it too late. I must confess, however, that I have a dread of the systemic shock that I see after its use, though I have been told that Dr. McCunn looks on it as a hopeful sign. I shall record two other cases.

1. Greyhound "R."* March 22nd, 1933.—At morning exercise apparently normal. Refused breakfast 9 a.m. Temperature 105·6°. No vomition. Large amount of almost pure blood passed *per rectum* 12.30 p.m. Prostration. Received 10 c.c. dog serum intravenously 2 p.m. After laying quiet all afternoon he brightened up in the evening and had quite recovered by night.

2. Greyhound "F. J." July 25th, 1933.—At exercise and apparently well 8.30 a.m. Diarrhœa 9.30. Temperature 103·2°. Later profuse bloody evacuation and prostration. No vomition. 10 c.c. dog serum intravenously. Dead 11 p.m.

I have seen a mild case in which a fair quantity of blood has been passed per rectum with little systemic disturbance. Brandy and white of egg and a powder composed of the carbonates of bismuth and magnesia t.i.d. effected a cure in 24 hours. My standby in all gastric cases is normal saline. Glucose or white of egg may be added for drinking purposes and in the event

of inappetence I inject ½ pint of glucose saline twice daily subcutaneously at body temperature. As the appetite returns calves' foot jelly is given alternately with milk and glucose. I am never in a hurry with meat and other solid food—three days after appetite returns is quite early enough—and I never use a white rusk.

My sole case of hæmorrhagic enteritis since August 1st, 1933, occurred on September 27th, 1934. The dog, a 13-months'-old sapling, had been on the premises for three months. He had only recently been put in a racing kennel and was never off the lead when at exercise. He had fed normally the previous evening and was found *in extremis* on a blood-covered floor at 7.30 a.m. He died the same day after further bloody evacuations and none of his companions was ill. A similar case occurred here in 1933 with a dog resting because of lameness.

Since both Mr. Wall and Mr. Gould raise the question of diet perhaps I might explain the routine here. The dogs never have any water to drink. They "feed sloppy" all the time. The diet is unaltered throughout the year. Sunday's diet differs from that of weekdays in that two bread and milk feeds are given instead of one bread and milk and one bread and broth feed. A ration of cooked and raw meat is supplied to every dog on weekdays. The milk and meat arrive fresh each morning and the bread used is made from the best wholemeal flour and is only slighted rusked. Vegetables are grown on the premises and receive a minimum of cooking. Bones are used fairly frequently and I can show Mr. Wall some seven-year-old dogs here whose teeth will bear comparison with those of any dogs of similar age. Decay is practically unknown.

Further, the frequent rupture of muscles and alleged weakness of phalanges is attributed to diet. My opinion is that muscles are sprained by the greyhound in his unrestrained effort to right himself whilst unbalanced. It may be that Mr. Wall is thinking of a different diet from that used here, but my records show that during the last three years to December 31st last, I have supplied 43,340 runners to our three tracks (exclusive of our Open Race competitors) and I have amputated 67 toes in that period. A few of these have come in solely for the operation and several are amputations from feet from which a toe had already been amputated. The proportion is surely not unduly high when one considers that the animals race all the year round and on all sorts of going.

In conclusion, let me just say that I am extremely sceptical of the value of so-called intestinal antiseptics. They seem to work quite well on occasion but in the long run I prefer to use liquid paraffin, bismuth with or without pepsin, and normal saline.

Yours faithfully,

Jas. K. Bateman, B.Sc., M.R.C.V.S.

The Hook Kennels,
Northaw, Herts.
*February 18th*, 1935.

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## INTERDIGITAL CYSTS

To the Editor of the Veterinary Record

Sir,—Concerning Professor McCunn's query regarding the possible influence of local conditions in the causation of interdigital cysts in dogs, if by different districts he means different kinds of road surfaces, then I am satisfied that the condition of the road surface very definitely affects the frequency of these cysts.

I have noticed that at certain times of the year when roads—in this locality—are under repair or being sprayed with tar and gravel, the occurrence of this condition is much more frequent than when the roads are either dry and hard or wet and comparatively soft.

I have also noticed that during the last, say, ten years the number of cases seems to have diminished with improved road surfaces. Soon after the war these cases were numerous and a nuisance; now-a-days I rarely see a case. On the other hand, I get a number of cases of acute inflammation of the solar surface of the paw—between the pads—and this almost invariably occurs during tar-spraying periods.

Yours faithfully,

Arthur Whicher,

1, Albert Road,
Bexhill-on-Sea.
*February 12th*, 1935.

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## JOHNE'S DISEASE

To the Editor of the Veterinary Record

Sir,—Replying to the discussion on his paper on Johne's disease, published in your issue of December 29th, 1934, Major Dunkin said (*vide* your report, p. 1559): "He knew Spicer's views on the subject, but while he was not wishful to disparage what Spicer had done and written, he wanted to say that Spicer had brought no evidence to support his statement. There was no detail of the ration and as he had said before, in some cases with no change of management or feeding the disease disappeared of itself."

This statement is so inaccurate that I can only imagine that Major Dunkin has simply glanced through what I have written.

In *The Veterinary Record*, May 28th, 1932, I had a short "Note on minerals," stating that the producers of mineral compounds recommended giving three pounds of minerals mixed with every 100 pounds of concentrate and although this is on the generous side I still consider this to be the best method of feeding. In your issue of February 3rd, 1934, I state that I do not think that anything less than five ounces a day will be of any use and that in very heavy milkers probably ten ounces would be required. I have discussed the details once or twice more when I have been writing on the subject.

To say, therefore, that I have brought no evidence to support my statements is incorrect. I must have instanced about 15 herds that have been seriously depleted by Johne's disease and in which directly minerals have been mixed with the rations, the loses have stopped. I have also had these results confirmed by other veterinary surgeons.

I may remind Major Dunkin that it is now three years since I pointed out the action minerals had on Johne's disease and so far I have had no occasion to alter my opinion as to their value: I am still waiting for some member of the profession to write to the *Record* saying that he has treated a herd, in which Johne's was prevalent, in the manner that I have described, and that it has failed to have the desired result.

Yours faithfully,

Arnold Spicer,

New Oxted,
Surrey.
*February 20th*, 1935.